Clinic Infrastructure and Equipment

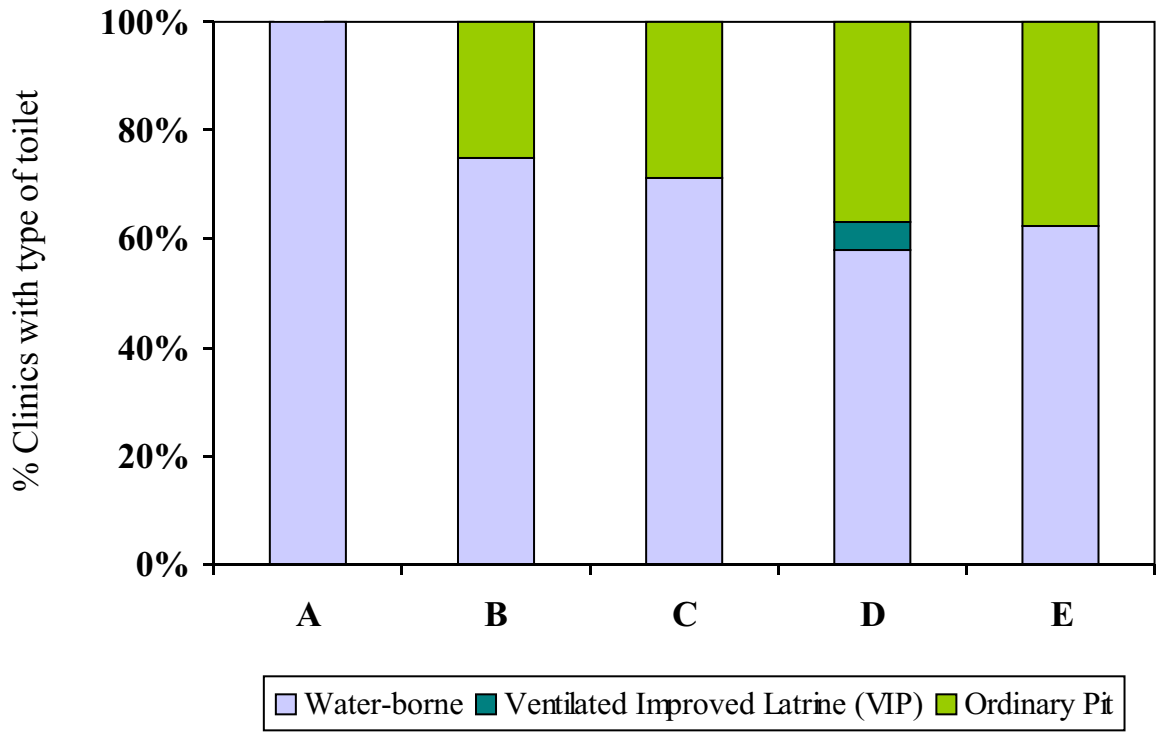
Key Findings

- Clinic infrastructure in the former homeland areas remains inferior - less than two-thirds of clinics in Regions D and E in 2000 had water-borne flush toilets, and piped water was available in only 19% to 25% of clinics, respectively, in these regions;
- Basic medical equipment is available virtually in all clinics, but oxygen cylinders are in only 39% clinics, respectively, in the Province;
- Lack of electricity supply and decent accommodation for nurses in remote rural clinics is a cause of poor service access;
- Lack of refrigerators for personal use by staff in rural areas results in staff using vaccine refrigerators for storing their food;
- The disposal of medical waste and sharps is often hazardous across the whole Province.

Toilets

The 2000 survey found that one in every four clinics (27.5%) in the Province does not have water-borne toilets (figure 22). Open pit latrines are found in Region D (37%) and Region E (38%) clinics, while all Region A clinics have flush toilets. The percent of clinics with water-borne or flush toilets in the Province is 72%, which is lower than the national average of 90%.

Figure 22 : Types of Toilets in Clinics - 2000



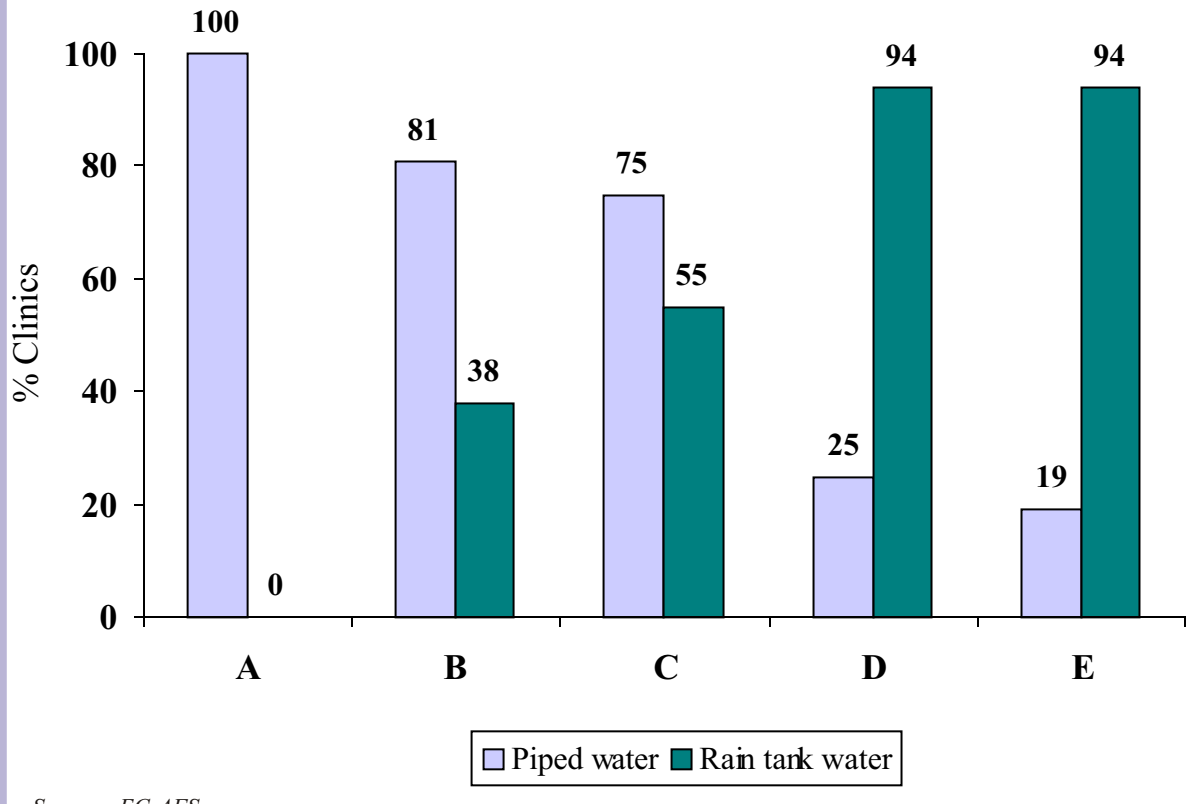
Source : EC-AFS

Water

The 1999 survey indicated that piped water was found in 61% of clinics in the Province: 100% in Region A and 19% in Region E (figure 23). In the most recent survey (2000), nursing staff in 92.3% clinics surveyed reported that they had access to safe drinking water of some kind. This basic need was not available to many clinics in Regions D and E, where staff in 16% and 19% of these clinics, respectively, had no access to safe drinking water. In 13 of the 88 clinics that answered this question, nursing staff said they had to walk some distance in order to fetch water for use in the clinic. In four clinics staff had to walk between twenty and thirty minutes, and in one clinic water was difficult to access, with the staff having to walk for more than one hour to fetch the water.

Rain tank water - the lifeline in many clinics of the former homelands.

Figure 23 : Source of Water in Clinics - 1999

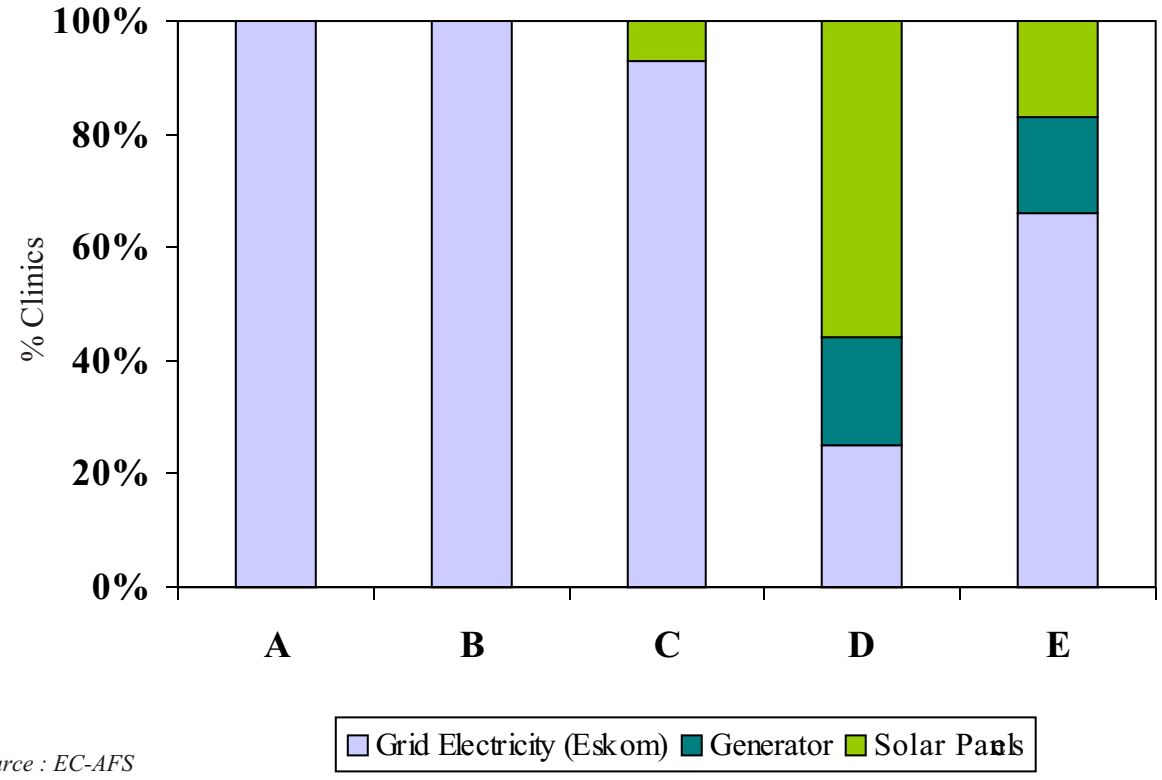


Source : EC-AFS

Electricity

In the 2000 survey 82.4% of clinics had some form of electricity supply, ranging from 100% in Region A to 71% in Region C. Seventy-seven percent were using grid electricity, 16% had solar panels, and only 6.7% were using generators. Almost two-thirds (64.8%) of these facilities surveyed reported that they had uninterrupted electricity supply in the past month. Most of the clinics in Region D were in fact referring to solar power, which is insufficient to meet power needs of most electrical appliances, except for refrigerators. All clinics in Regions A and B and over 90% in Region C had grid electricity, while less than one in four clinics in Region D and two out of three clinics in Region E had this power source (figure 24).

Figure 24 : Source of Electric Power in Clinics - 2000



Source : EC-AFS

Privacy

The 1999 survey found that one in five clinics visited had no privacy in the consultation rooms. In such clinics, situated mainly in the former Transkei, patients often had to be examined in a room partitioned with only a curtain, and other patients awaiting consultation could hear the conversation between the nurse and patient. In many of these, there are no sheltered waiting areas, and patients crowd into a single room where privacy or even discrete conversation is not possible. It is not surprising, therefore, that sensitive personnal issues such as family planning, HIV testing, STI contacts are not discussed; as reflected in the lower performance of these services in many of the poorly resourced clinic facilities.

Accommodation is necessary mainly in rural settings where nursing staff are not part of the communities. The 2000 survey found that none of the Region A clinics surveyed provided accommodation for staff. One in four Region B clinics had staff accommodation; about half of Regions C and E clinics and 84% of Region D clinics accommodated staff on the premises. Of those clinics with staff accommodation, 32% had accommodation in poor state, according to the nurses.

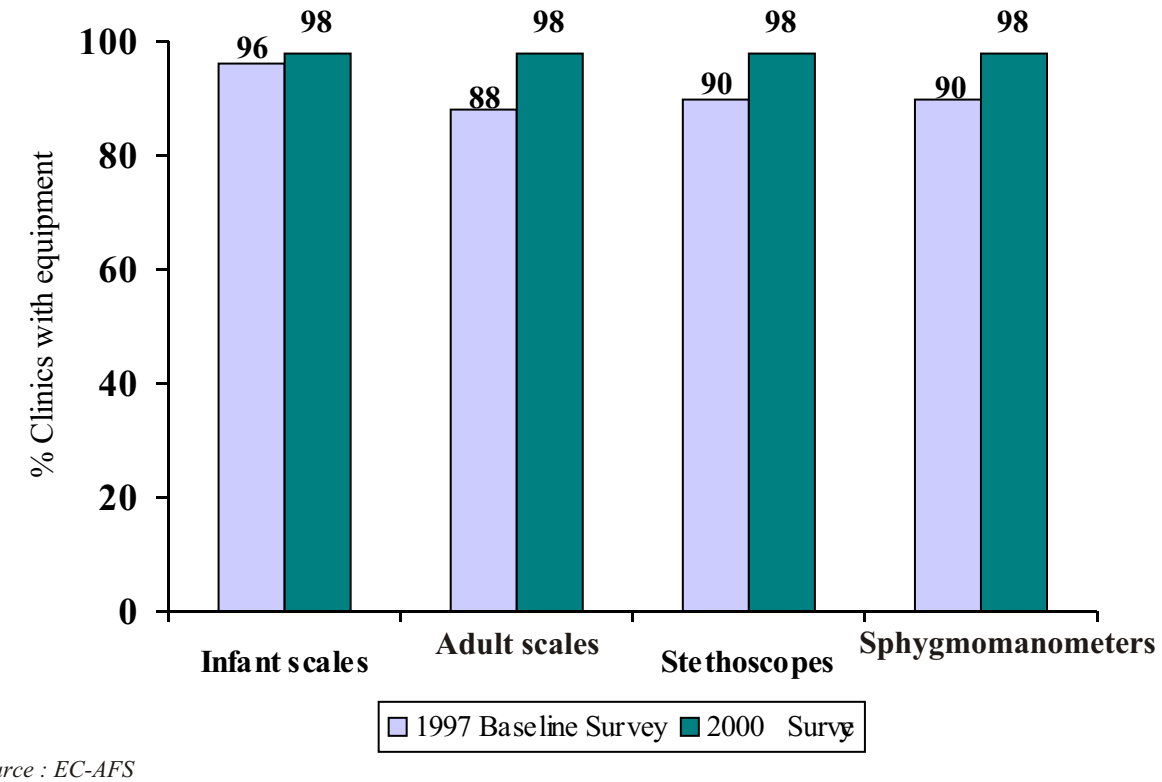
Equipment in Working Condition

A further component of effective PHC delivery is the presence of essential equipment. With this in mind, survey indicators include the presence of essential equipment in working condition. Survey results show some improvement and also highlight the regions where continued efforts are required in order to ensure that essential equipment is present and functioning in all clinics.

Basic equipment, essential for effective delivery of PHC services, are available in most clinics.

Infant and adult scales have been available in most clinics since the baseline survey (figure 25). The few clinics, particularly in Regions D and E which did not have scales were supplied with such equipment purchased by the EQUITY Project during 1999/2000. Stethoscopes and sphygmomanometers are both required for measuring blood pressure. The 1999 survey noted that a number of clinics, in Regions D and E, were without these two essential items.

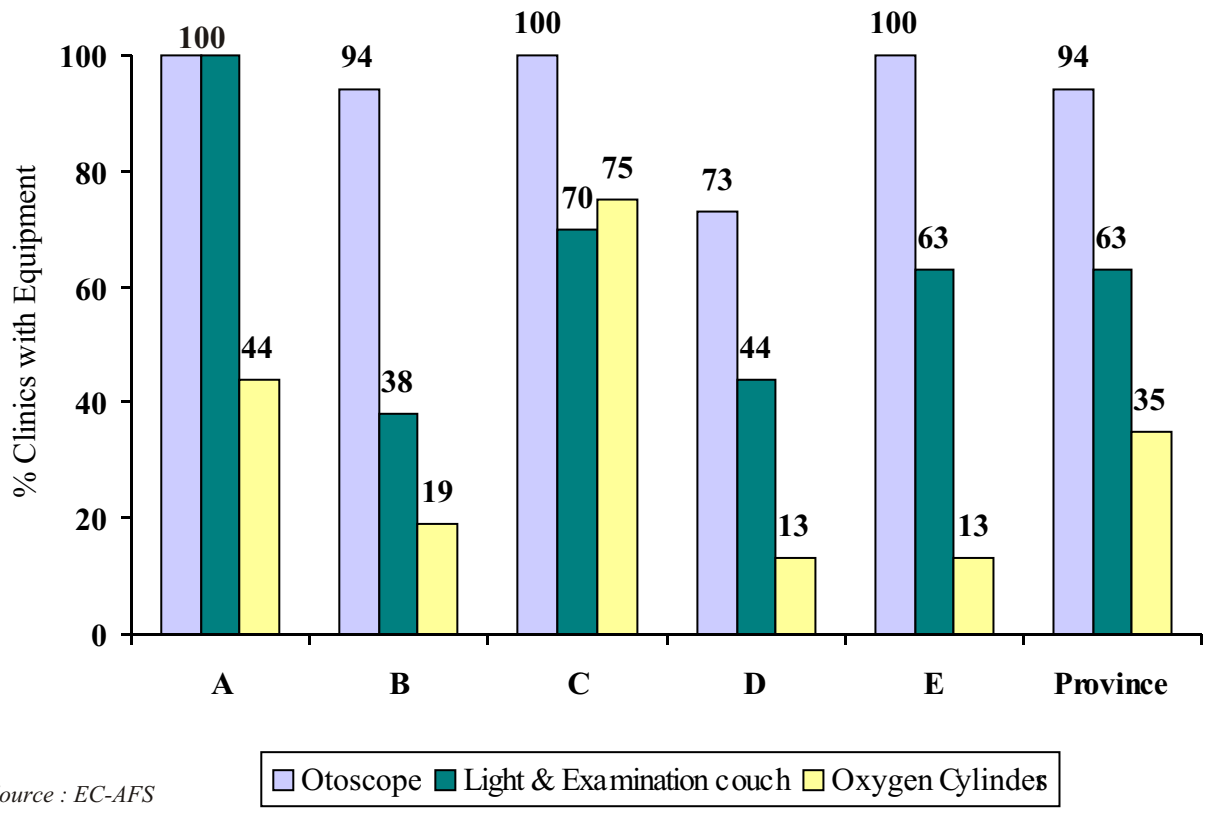
Figure 25 : Basic Equipment in Clinics



Source : EC-AFS

With the exception of Region D, all the other regions had over 90% of surveyed clinics with working otoscopes, but problems with availability of both a light and an examination couch were experienced in all regions except Region A (figure 26). Across the Province, the 1999 survey found that only 35% of clinics had filled oxygen cylinders on site. This was essentially unchanged in 2000 (39%).

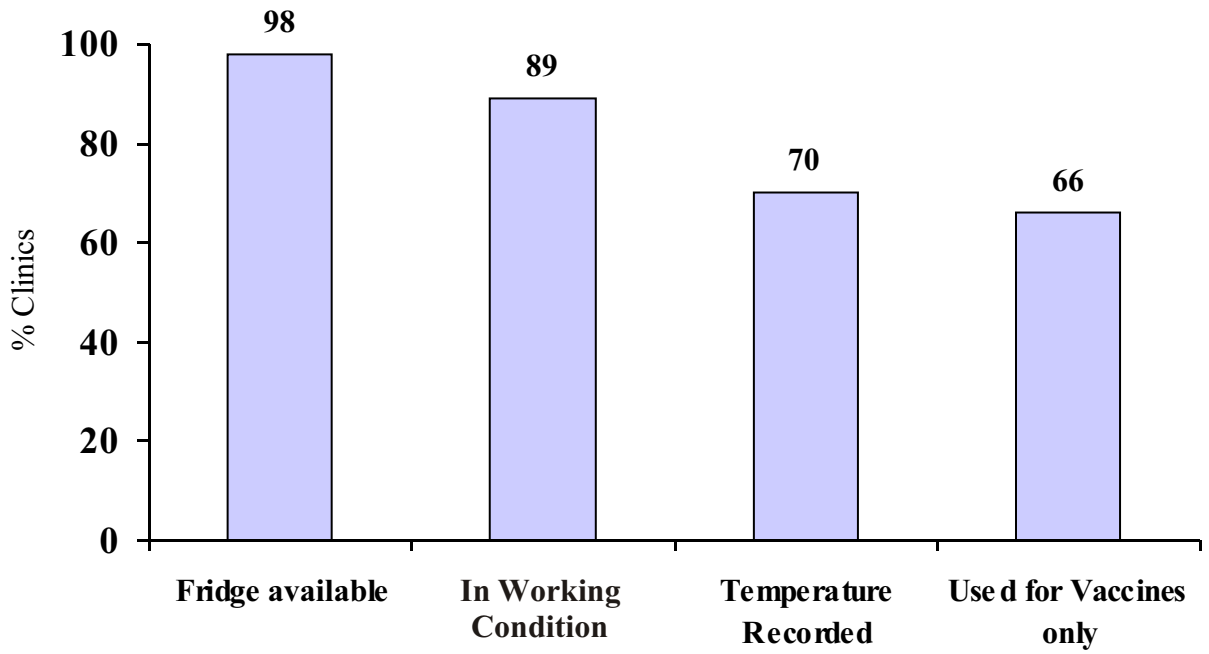
Figure 26 : **Essential Equipment in Clinics - 1999**



Source : EC-AFS

As of 2000, almost all (98%) clinics surveyed had refrigerators - confirming the improvement noted in 1999, which showed an increase from 87% in 1997, to 98% in 1999 (figure 27). The 1999 survey collected additional information for evaluation of the cold-chain maintenance. Although 98% of clinics had refrigerators, not all of the refrigerators were in working condition, as can be seen from figure 27. Seventy percent of those refrigerators in working condition had a temperature record used to monitor daily temperature reading inside the refrigerator. During 2000, the EQUITY Project purchased thermometers which were placed directly in refrigerators by the Project's regional coordinators during their field visits to clinics. In some clinics the practice of storing food and drinks in refrigerators which are supposed to be for the sole use of vaccines and other medical items, has unfortunately not stopped. The 1999 survey found that one out of every three refrigerators (33%) was not exclusively used for vaccines.

Figure 27 : **Refrigerators for Storing Vaccines - 1999**

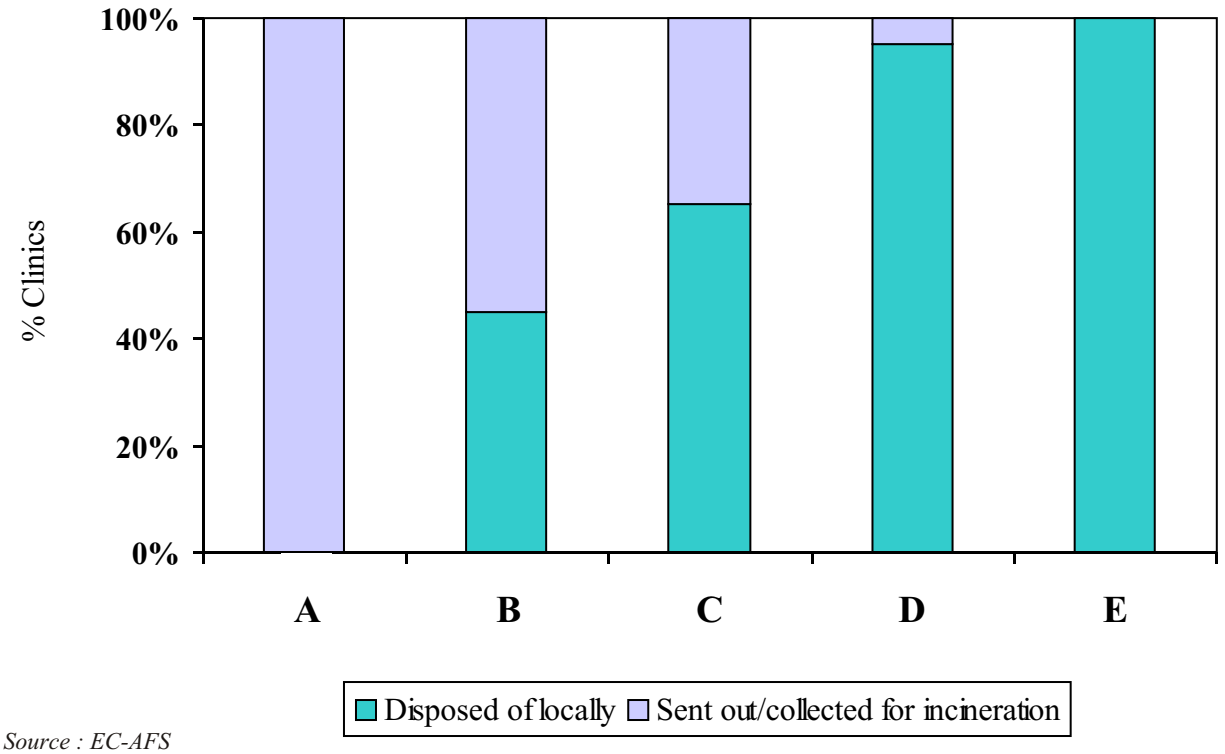


Source : EC-AFS

Disposal of Medical Waste and Sharps

Medical waste, due to its hazardous nature, should be given special attention when handled, being transported, and treated before final disposition. Non-separation of medical from domestic waste is suggestive of poor management, as it leads to massive loads of waste needing expensive disposal methods necessary for the medical waste. Separation ensures that the additional costs of handling infectious waste does not apply to the non-infectious waste. Medical waste disposal often becomes a public health hazard. Inspections performed in

Figure 28 : Disposal of Medical Waste in Clinics - 1999



Source : EC-AFS

recent field visits revealed that medical waste is often thrown in a pit outside the clinic and not incinerated. The 2000 survey found that less than three in four clinics (72.5%) in the Province were incinerating medical waste (figure 28). One in ten clinics (11%) were disposing medical waste in pits or pit-latrines and 15.4% were burning waste in open fires within the facility premises. This inappropriate practice is occurring mostly in Regions D and E, where the availability of equipment and systems for waste disposal is deficient and below acceptable environmental health standards. The 1999 survey found considerable variations in clinics having a separate disposal system for domestic waste (table 5).

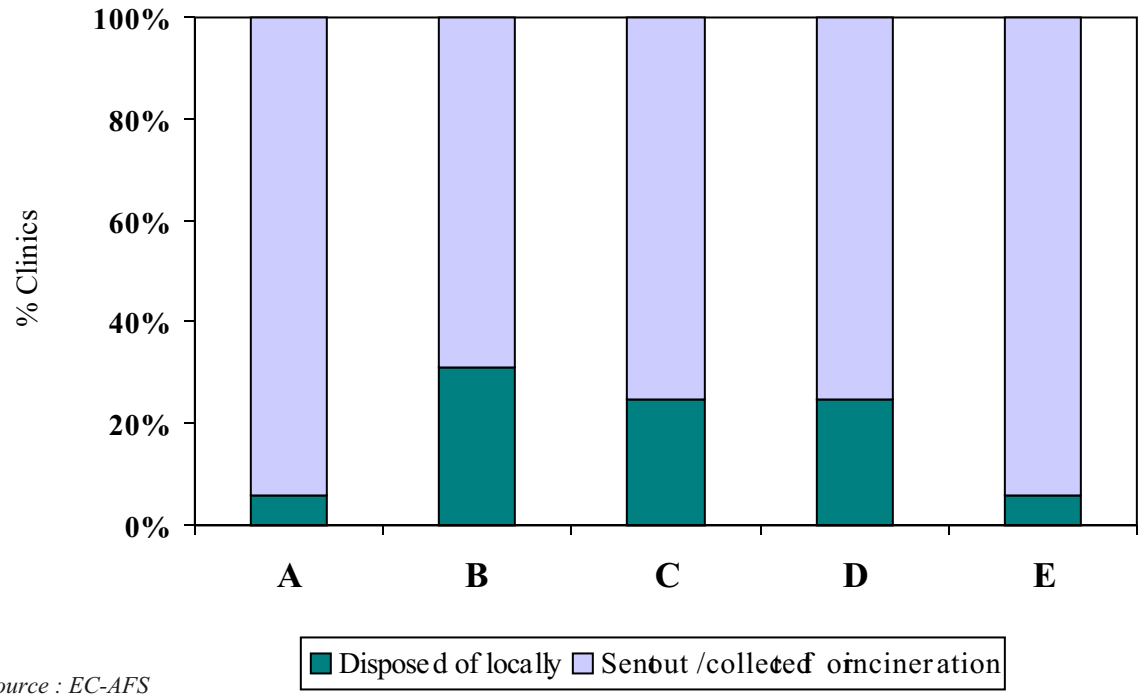
Table 5 : Separate Disposal System for Domestic Waste - 1999

	REGION A	REGION B	REGION C	REGION D	REGION E	E/Cape
% Clinics	100	63	85	31	56	68

Source : EC-AFS

Medical sharps include clinical items such as syringes, needles, and blades that are capable of causing penetrating injuries, thus exposing affected persons to serious infection, especially HIV and hepatitis. Medical sharps must always be incinerated in all clinics, as local burying can be too hazardous. During 2000, data on disposal of sharps was not collected in the survey. One in five clinics across the Province in 1999 disposed of sharps locally within facility premises (figure 29). The 1999 survey results also found that, on average, clinics in Regions A and B experienced a 7 day wait for medical waste and sharp collection for incineration, as compared to 18 days in Region C and just over 21 days in Regions D and E. Some clinics in Region E experienced delays of over three months. Between collection dates, 21% of clinics in the Province use refuse bags, 27% use colour-coded bags, and 38% use plastic disposal boxes to store waste or sharps. Eighty-eight percent of Region A clinics use colour-coded bags, yet no clinics in Region E have these bags available. Region E clinics use plastic disposal boxes (87.5%). Refuse bags are the primary collection containers for Region C clinics. Many of these systems are dangerous to nursing staff as well as cleaners.

Figure 29 : Disposal of Medical Sharps in Clinics - 1999



Source : EC-AFS

Some Recommendations

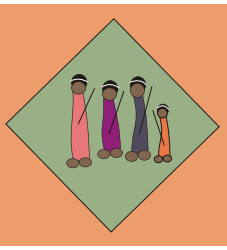
- **The backlogs of infrastructure development in the former homelands should be prioritised through a provincial integrated rural development strategy;**
- **There is an urgent need for improvement in clinic buildings, electricity, water supply and sanitation in Regions D and E;**
- **A policy on incentives for nurses working in remote rural clinics should be developed, and means (such as preference for training, promotion, housing, etc) have to be found to reward nurses serving in these areas;**
- **Proper systems for disposal of medical wastes and sharps should be implemented.**

Drug Management

Key Findings

- **There have been major improvements in the drug management and information system. Stock levels at depots can now be accessed directly from the provincial office;**
- **Unfilled pharmaceutical posts in districts remain a problem. In Region E, only one of the recommended 30 posts is filled;**
- **Drug availability in clinics, especially in the former homelands, has improved considerably. This is due to improved drug distribution systems from depots and the introduction of stock control cards in clinics in 1998;**
- **Drugs that are most frequently out of stock are often those that are over-used, such as antibiotics.**

The availability of drugs and equipment is key to the proper functioning of health services. Without functioning facilities, diagnostic equipment, medicines and supplies, knowledge and skills of staff can make little difference. The delivery of services depends on a reliable supply of carefully chosen essential drugs, vaccines, and supplies, not only to assure high quality of services, but also to enhance staff motivation, a key factor that influences the capacity of human resources to deliver quality health care. Lack of drugs in the clinics was a chronic complaint of staff and clients alike in 1997, a fact adequately documented in the baseline survey report, which showed many drugs were out of stock on any given day. Improving this situation was a major objective of the ECDOH/ EQUITY Project.



Drug Management Systems

The Eastern Cape Province has two pharmaceutical depots (one in Umtata and the other in Port Elizabeth). The office of the Deputy Director of Pharmaceutical Services is located in the ECDOH building in Bisho. All transactions processed by the two pharmaceutical depots are captured in the computerised inventory system, the Medical Supplies Administration System (MEDSAS), installed in 1995. Unfortunately this data was available only on site and not to provincial managers in Bisho. Furthermore, reports generated by MEDSAS are not easy to use and cannot be customized to suit particular needs of the manager. To make information readily available, the computer in the office of the Deputy Director was recently connected directly to both depots via the government-wide area network. A report generator, INFOMAKER ©, was installed and over 45 report templates were developed. It is now possible to produce regular and ad-hoc management reports from MEDSAS based on the most current data. All reports are fully customisable. Information on each clinic and district that was previously unavailable, can now be retrieved and circulated. These reports allow for the establishment of a relationship between consumption and cost, by identifying the top items "responsible" for a greater share of the expenditure. This system is already playing an important role in monitoring drug use and expenditures. Some of the most useful and frequently used reports are shown below:

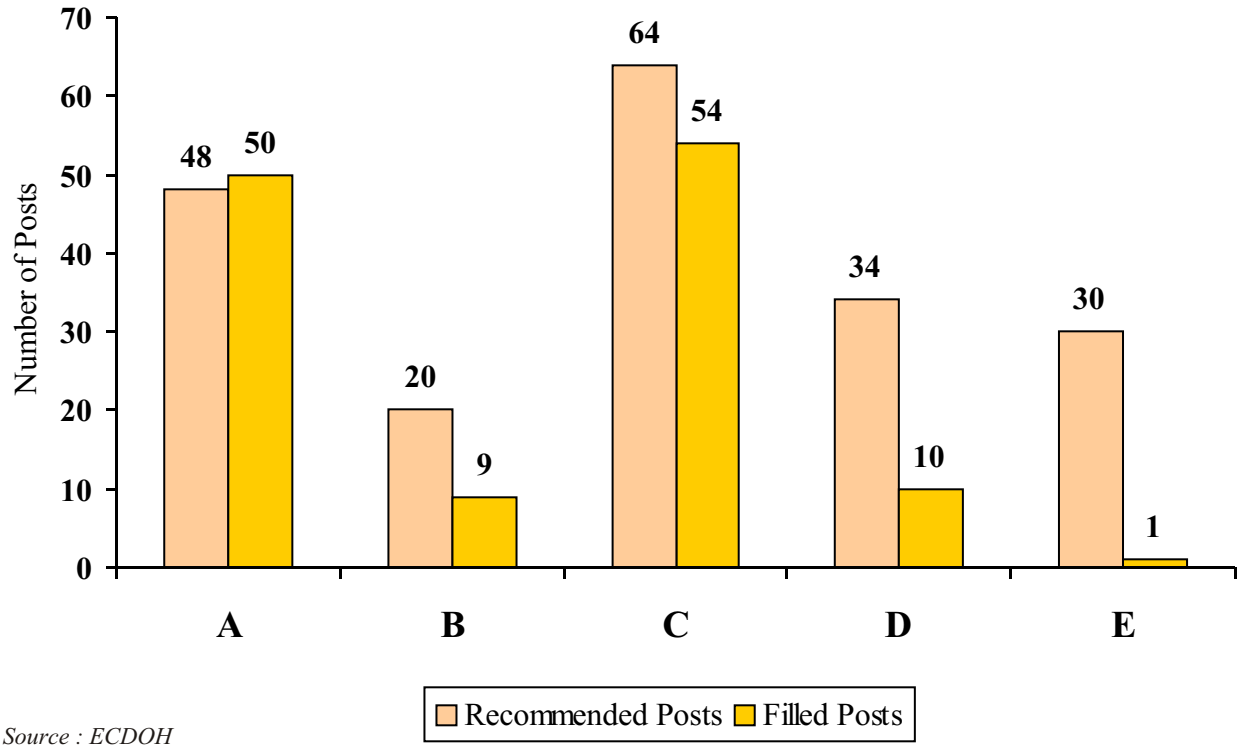
Frequently Used Infomaker Reports

- ABC Analysis* for Each Depot
- ABC Analysis by Demander (each facility has a unique code)
- ABC Analysis by District
- Monthly Expenditures vs. Budget by Demander
- Monthly Expenditures vs. Budget by District
- Comparison of Expenditures by Similar Type of Facilities
- Service-level Summary (Quantity Requested vs. Quantity Received)
- Stock-Out and Outstanding Order
- TB Drugs Stock & Consumption
- Immunisation Program Items Stock & Consumption
- Expenditure by Tender Group by Period
- Supplier Performance (lead time and partial shipment report)
- Supplier MEDSAS Payment vs. Financial Management System Payment

* *(ABC reports show the amount spent on items as a percentage of the overall expenditures. Typically 20% of the items account for 80% of the expenditures. This enables identification of major cost drivers and whether "non-drugs-of-choice" are amongst the top Essential Drugs).*

Unfortunately, the pharmaceuticals directorate continues to be understaffed, especially at the lower levels where the filling of pharmacist posts is critical to ensure that drugs reach the clinics, and the patients for which they are intended. Disparity in filling of recommended pharmaceutical management posts amongst the regions is illustrated by figure 30, which shows Region A with two more pharmacy managers than recommended.

Figure 30 : **Pharmaceutical Management Posts - 2000**

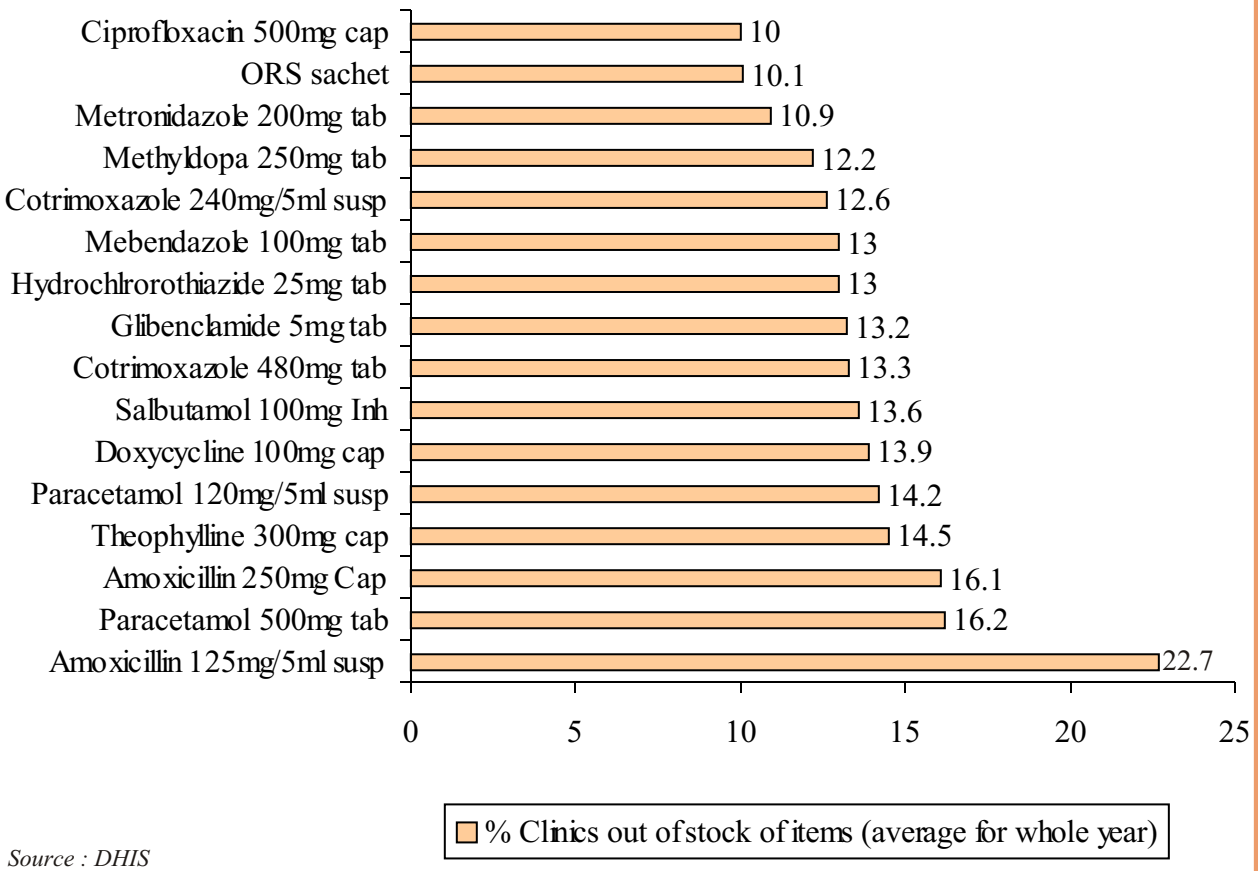


Source : ECDOH

In all other regions, available appointed staff are far below requirements, with Regions D and E, by far, the worst with, respectively, 29% and only one of thirty recommended posts filled. Unlike most other provinces, the Eastern Cape Province does not have any regional or district pharmacists. Moreover, in the districts no staff are specifically dedicated to the supervision of drug supply management activities. This makes the implementation of any system and the follow-up very difficult.

In spite of these problems, availability of essential drugs has improved steadily over the past 4 years as shown by the monthly stock-out reports of the DHIS. Independently verified by the 2000 survey, key drugs are present in 90% of clinics. Nonetheless, Regions D and E continue to suffer stock-outs, largely because of poor inventory management at the district hospitals upon which they are dependent for resupply. The products most often out of stock tend to be those most often over-utilised, especially antibiotics. Figure 31 shows reported stock-out for the entire Province for each month in 1999, for all items reported by 10% or more of clinics. While antibiotics feature prominently, especially amoxicillin and cotrimoxazol - both broad spectrums used for adults and children - it is notable that antipyretics, anti-asthma, anti-hypertensives and even oral rehydration solution (ORS) feature on this list. In Region A none of the drugs reach 10% stock-out levels, while in Region D virtually all drugs are reported out in 10% or more of clinics each month. Interestingly, the overall consumption of these drugs has not changed significantly over the past 2 years, indicating that chronic shortfall is more a matter of stock management in the periphery than in depot supply.

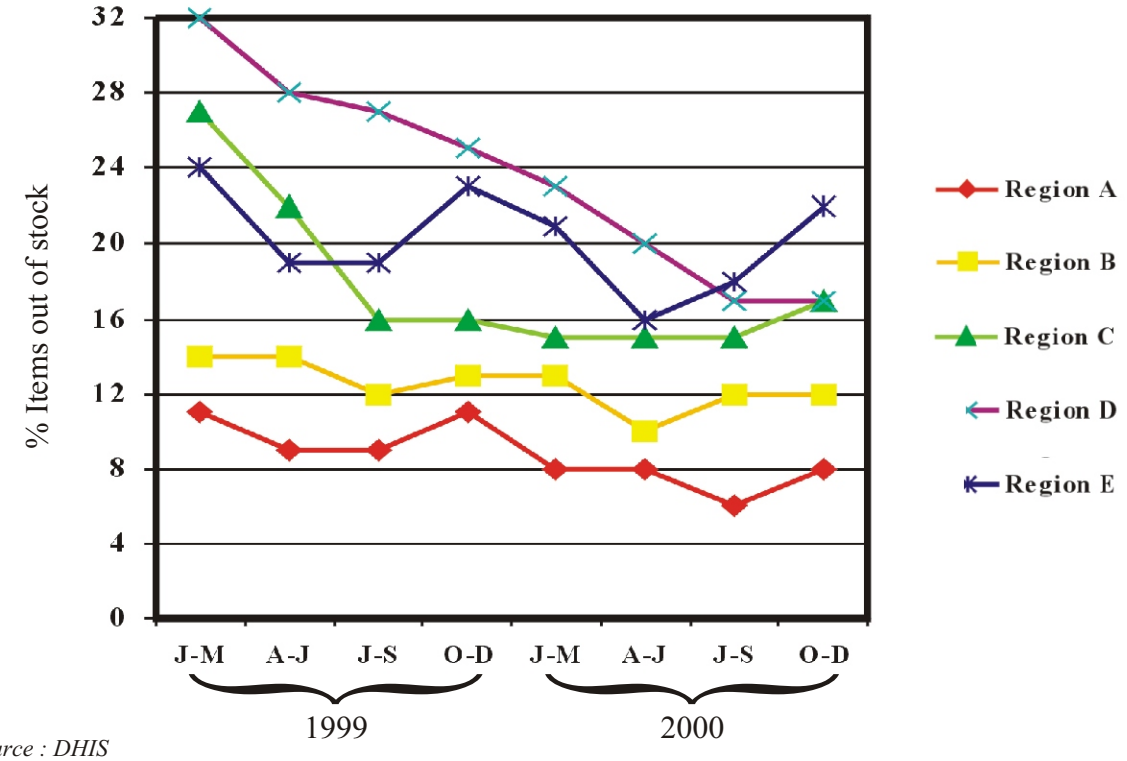
Figure 31 : **Drugs out of Stock - 1999**



Source : DHIS

With the introduction of stock control cards, shortage of drugs has been greatly decreased in many clinics across the Province.

Figure 32 : Tracer Items Stock-out 1999 to 2000



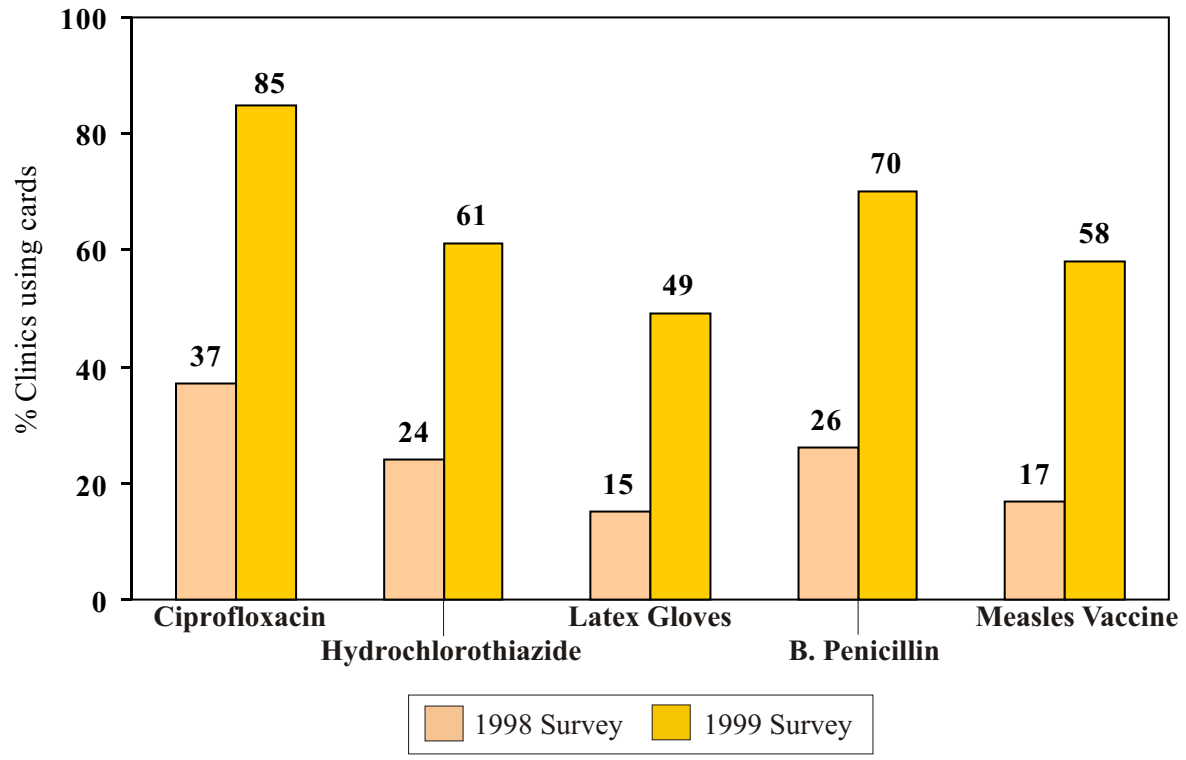
Source : DHIS

Stock Control Cards & Drug Availability

Proper inventory management at all levels is critical to support the delivery of health services. The baseline survey revealed a lack of reliable inventory control systems in health facilities. Pharmacy inventory control is based on careful record keeping by users of the quantities of drugs on hand and used to ensure that resupply is both timely and adequate in quantity. The "bin" stock card system was introduced in early 1998 to improve and promote good inventory management practices at primary health care facilities.

Training workshops on the use of the bin card and pre-printed requisition books were conducted in each district over a period of 6 months and with over 600 clinic staff members, mainly nurses. In less than two years, survey results show a remarkable increase in the use of bin cards to track drug stocks for five key items (figure 33). Clinic staff who have implemented the bin card system claim to have reduced the incidence of stock-outs to none. However, in half of clinics these cards are not yet properly used and often the staff are still struggling with some of the calculations involved in determining the proper replenishing levels.

Figure 33 : **Use of Pharmaceutical Stock Control Cards in Clinics**



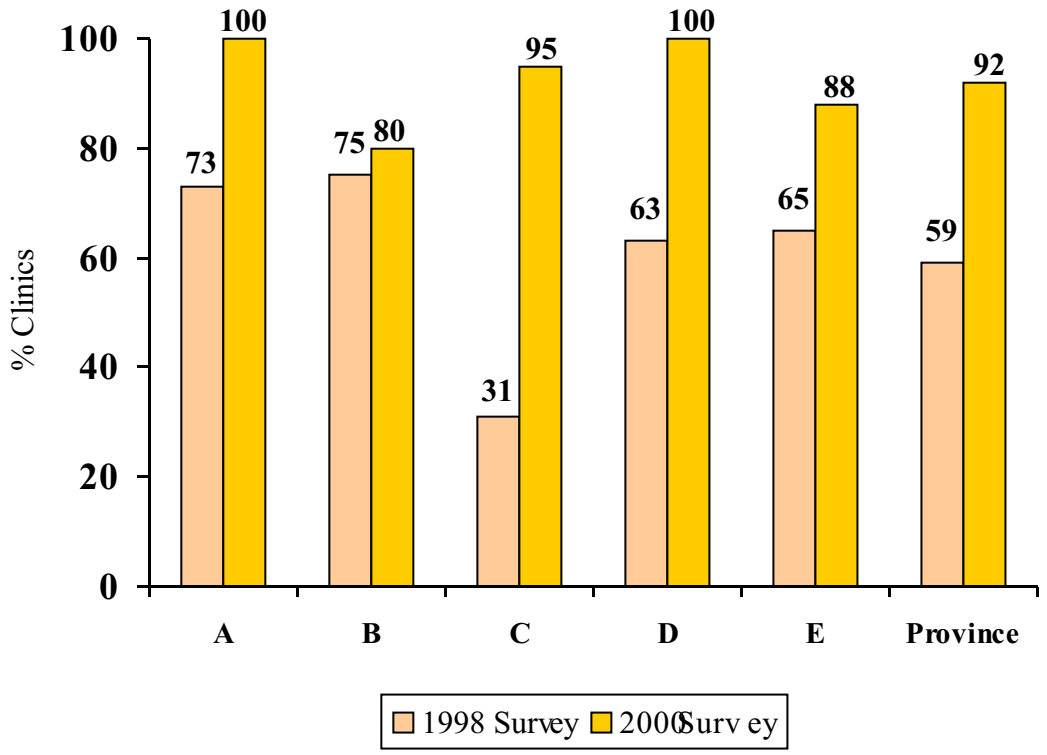
Source : EC-AFS

Since the baseline survey in 1997, the availability of ten indicator drugs and items in the clinics have been measured at the time of survey. In 1998, 59% of clinics surveyed had seven or more indicator drugs available. The 2000 survey found that this had increased to 92% of clinics, as shown in figure 34 below. The improvement in drug availability can be largely attributed to the introduction and use of bin cards.

10 Key Indicator Drugs/Items

Item #	Description
1	Measles vaccine
2	Benzanthine Penicillin, injectable
3	Injectable contraceptives
4	Cotrimoxazole liquid
5	All TB drugs Rifampicin, Isoniazid, Pyrazinamide, Ethambutol
6	Ciprofloxacin tablets
7	Oral rehydration solution
8	Iron tablets
9	Latex gloves
10	Methyldopa

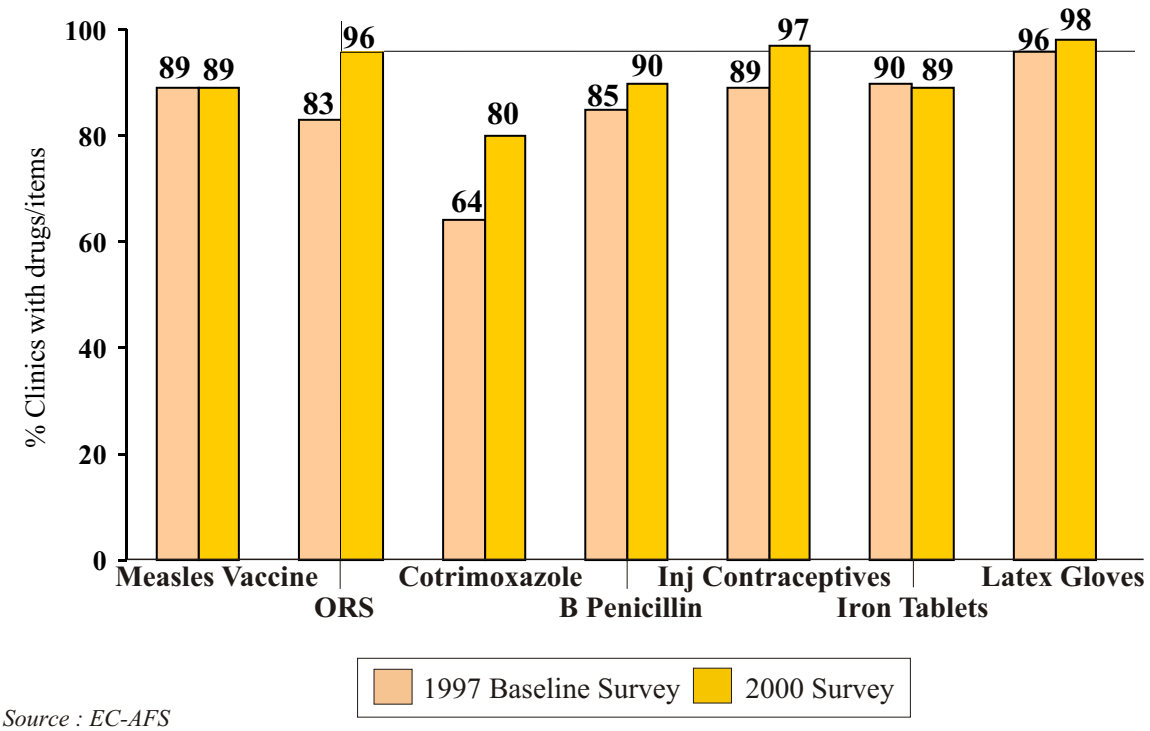
Figure 34 : **Percent of Clinics With 7 or More of 10 Indicator Drugs**



Source : EC-AFS

Further demonstration of improvement in drug availability in the Province is shown in figure 35. The 1997 survey showed that many clinics throughout the Province did not have all of the seven key drugs/items. By 2000, not only had the disparity between regions largely disappeared, but also most clinics were supplied with all seven of these essential medicines.

Figure 35 : **Availability of Key Indicator Items**

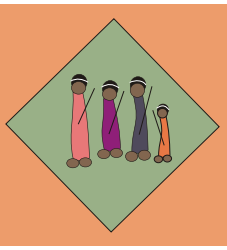


Source : EC-AFS

One of the research teams in the 1999 survey related how they were stopped by a group of women, with children on their backs, who had followed the team vehicle to the clinic, thinking it had brought drugs. The researchers, especially in Regions D and E, also witnessed distressing scenes in which mothers who had brought their sick children were sent home without any medication and told to send elder children to the clinic a week later to check whether drugs had been delivered. Thus, while drug availability is better overall, inadequacy still plagues some of the most needy areas.

The 2000 survey found that between 84% and 100% of clinics in the regions had lockable storage facilities for drugs. Despite this, there have been press reports about pilferage of drugs in all regions of the Province. In his policy speech in 2000, the Eastern Cape Provincial MEC for Health, Dr Bevan Goqwana, acknowledged the high extent of theft of medicines throughout the drug supply chain. He went on to say:

"The Department is introducing bar coding of parcels as part of the outsourcing plan, and this will reduce pilferage, which is estimated at about 15-20%, by at least 5% within the current financial year."



A proposal for the transformation of the pharmaceutical depots has been developed jointly with the head of the pharmaceutical services, a consulting firm, and the EQUITY Project. The proposal focuses on the creation of a trading account for the depots so that they have more flexibility and control over their management; increasing security control mechanisms; and outsourcing of drug distribution to the private sector, to ensure the delivery directly to the facility (or district level) in all regions. The proposal further advocates transforming the Umtata depot into a transit depot and concentrate all procurement activities at the Port Elizabeth depot. It is expected that implementation of these carefully developed management changes will further improve drug supplies.

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Some Recommendations

- **The recruitment and training of staff to fill vacant pharmaceutical posts in districts should be given high priority;**
- **Hospital responsiveness to drug needs of clinics dependent on them should be improved;**
- **The use of standard treatment guidelines to reduce over-use of commonly prescribed drugs should be intensified.**

Basic PHC Services - Towards a Core Package

Key Findings

- Access to a full package of integrated basic PHC services has increased, with 64% of clinics providing 9 basic services 5 days a week in 2000;
- By 2000, eight of nine basic services were individually offered 5 days a week in 89-98% of clinics. Antenatal care was present in only 78% of clinics;
- Although antenatal care is widely available and generally used by most pregnant women, syphilis tests are not done for most women in Regions D and E;
- Use of family planning is lowest where fertility is highest - in Regions D and E where fertility rates are 6.3 and 5.3 per woman, respectively;
- Adult health is characterised by high levels of hypertension, tuberculosis, obesity and smoking amongst men;
- Emergency transport remains a problem in most of the Province but is far worse in the former homelands, with only 17% of clinics in Region E having access to an ambulance;
- Back-referral of PHC patients referred to hospitals or doctors remains weak across the Province.

Basic Primary Health Care Services

The need to select a package of priority PHC services to be provided at each level of the health care system has been felt by many health workers across the country. The Department of Health, following a series of consultative workshops country-wide on the matter, has produced a comprehensive PHC package document.

In the Eastern Cape Province, the EQUITY Project helped to develop a checklist for use at each level of care, which provides a comprehensive integrated approach designed to eliminate or minimise the promotive/preventive-curative divide between former provincial services and local government services. The package is intended for use at any level of care within a district and would serve to unite the different service levels into one seamless continuation, of care for all the population of the district. The improvement in integration of services in the Province over the last two years can be attributed to the implementation of the PHC checklist tool and the numerous workshops on integration conducted in the Province.

Since the 1997 survey, nine services have been considered as basic and indicators of integration. These services are ANC, FP, nutrition, STIs, child curative, immunisation, adult curative, chronic care, and tuberculosis treatment (including diagnosis or referral for diagnosis). Comparison of results from the same clinics surveyed in 1997 and in 1999 show an increase of 50% in provision of all nine basic PHC services, five days or more per week (figure 36). Region B is the highest, with 94% of clinics providing the nine services at least one day per week and 81% of clinics providing the nine services five days per week.

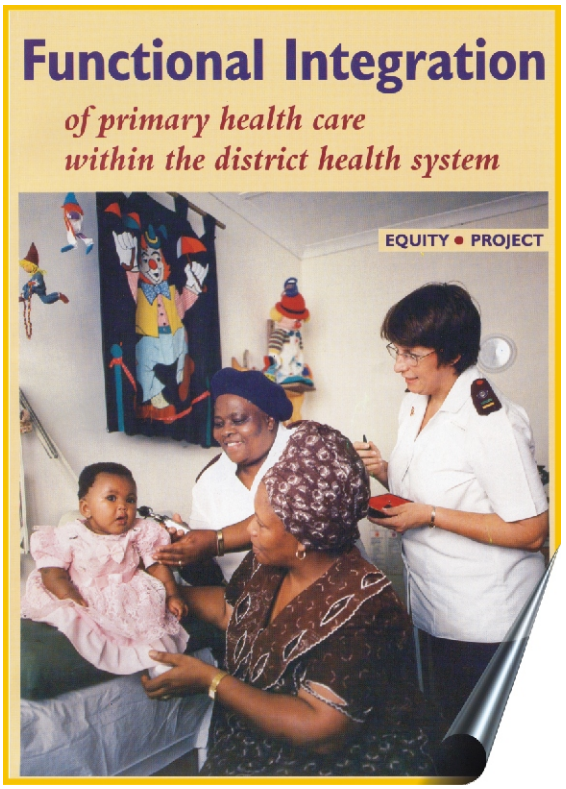
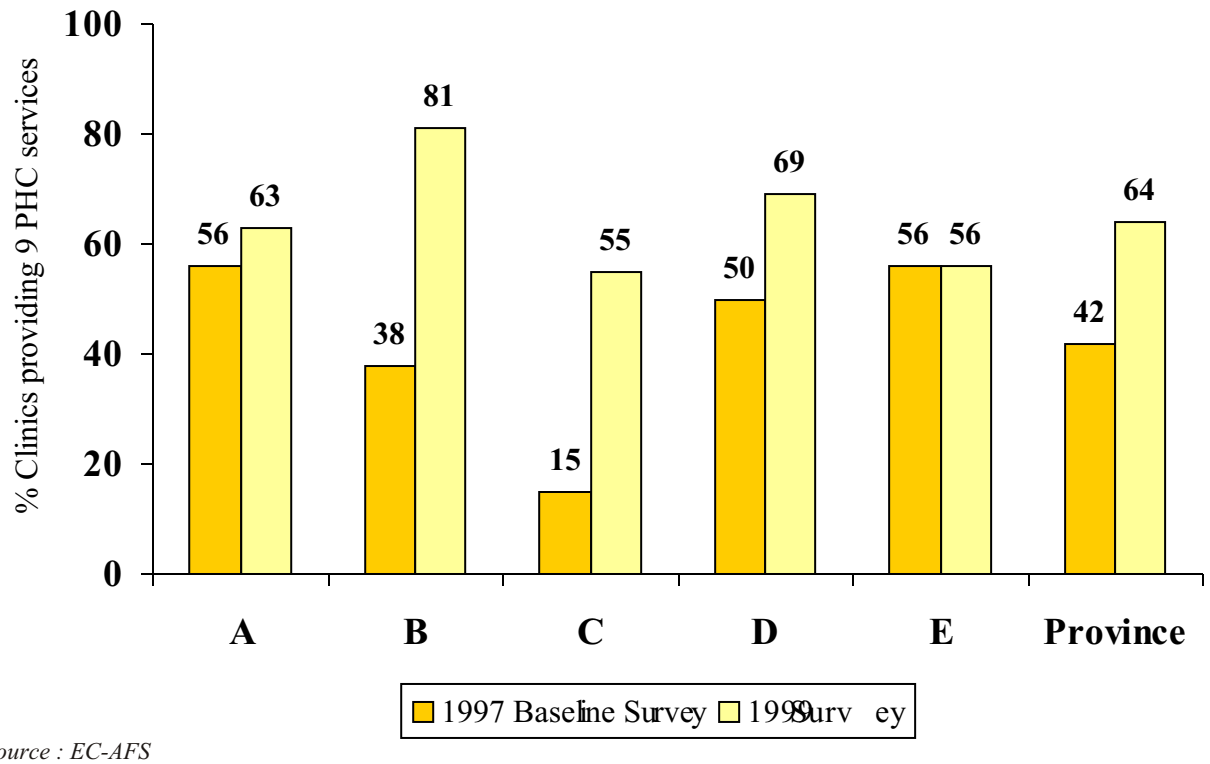


Figure 36 : Integration of 9 Basic PHC Services 5 Days/Week

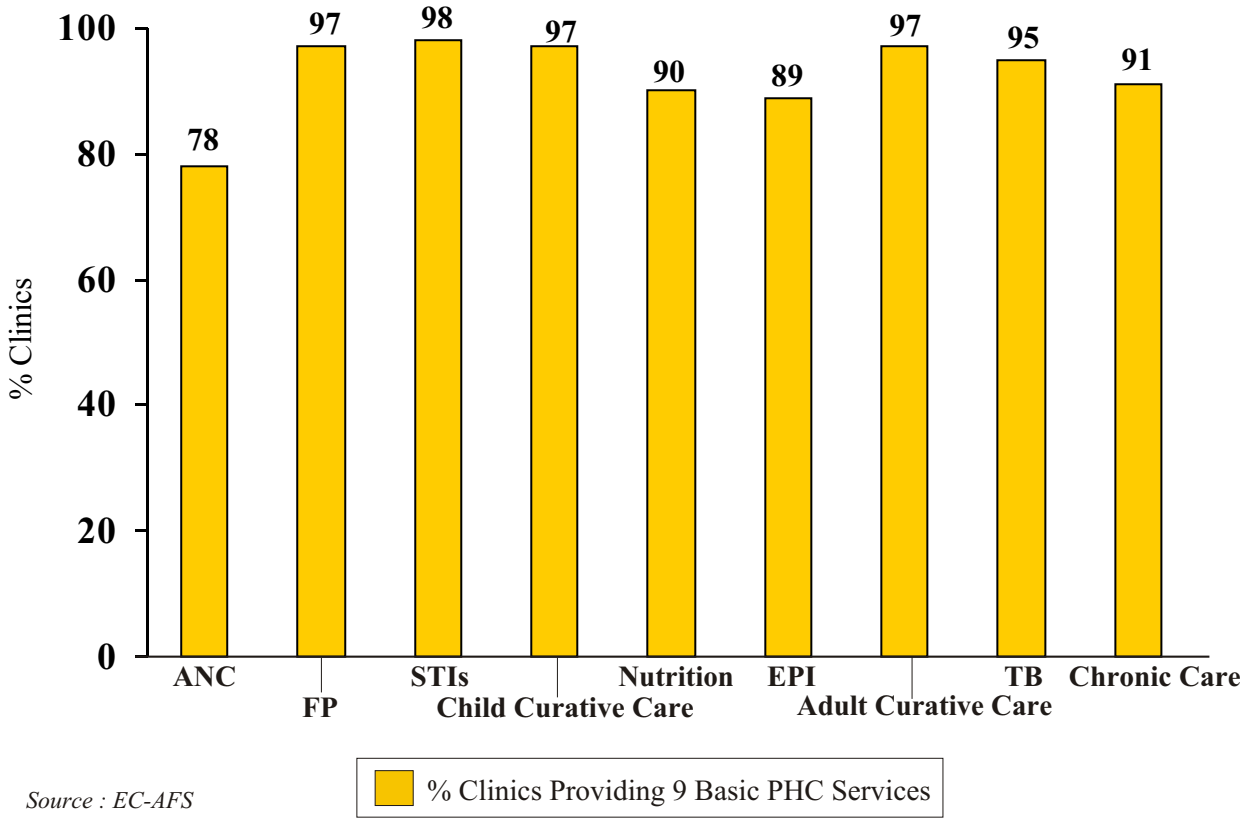


Source : EC-AFS

Results of the 2000 survey show that the Province has a higher percentage of clinics providing key PHC services all weekdays than the national average. Immunisations are provided in 89% of clinics, compared to 73.7% nationally; FP in 96.7%, versus 87.1% nationally; and ANC in 78% compared to less than 60% nationally (figure 37).

Many of these services deal with the Province's two main priority areas: maternal, child and women's health and HIV/AIDS/STI, and tuberculosis. Although these services are part of the integrated package of PHC services, they will be dealt with in the next two chapters due to their importance and need for special attention.

Figure 37 : Provision of 9 Basic PHC Services 5 Days/Week - 2000

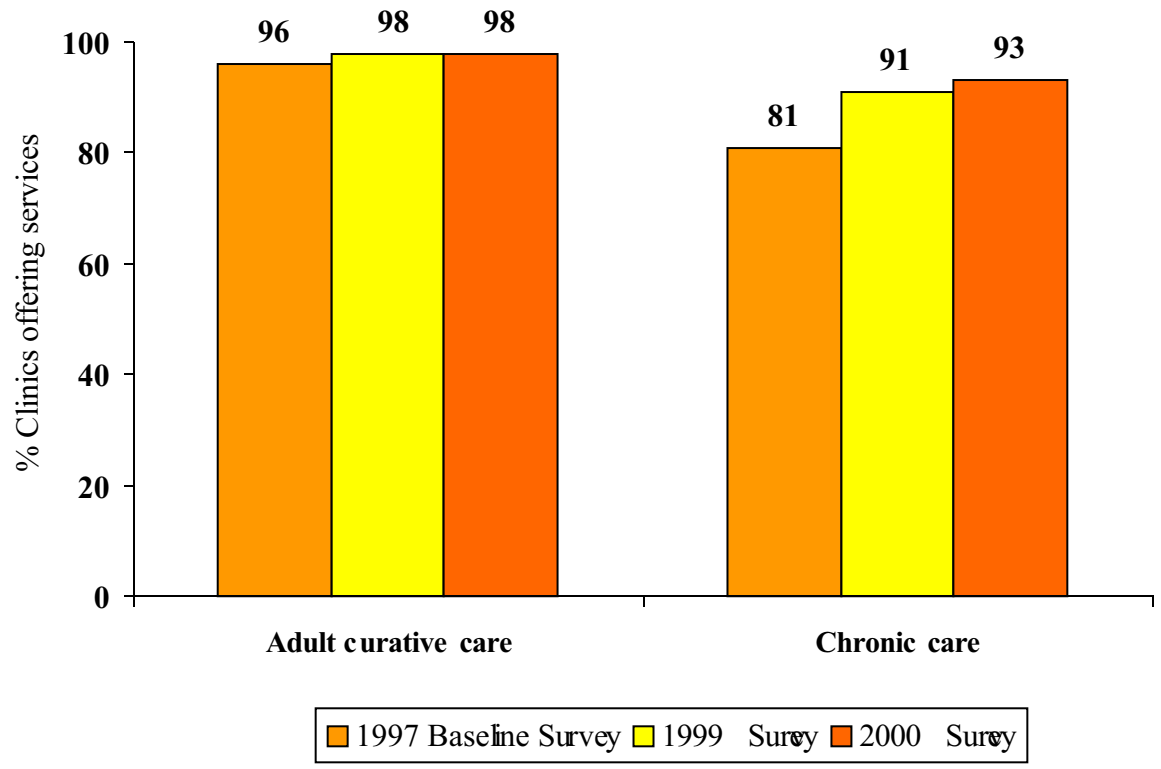


Source : EC-AFS

Adult health

The findings of the annual facility surveys in 1997 and 1999, and in 2000, indicate that adult curative care on a daily basis is provided in virtually all clinics in the Province. Chronic care increased from 81% in 1997 to 91% in 1999, and the 2000 facility survey findings were confirmation of this increase in the provision of this service (figure 38). DHIS findings report that a total of 1,349,180 chronic cases were seen in PHC facilities during 1999, up from 1,005,850 chronic cases during the previous year. This accounts for 9.9% of all patients seen during the year.

Figure 38 : Adult and Chronic Care Services 5 Days/Week



Source : EC-AFS

Mental Health

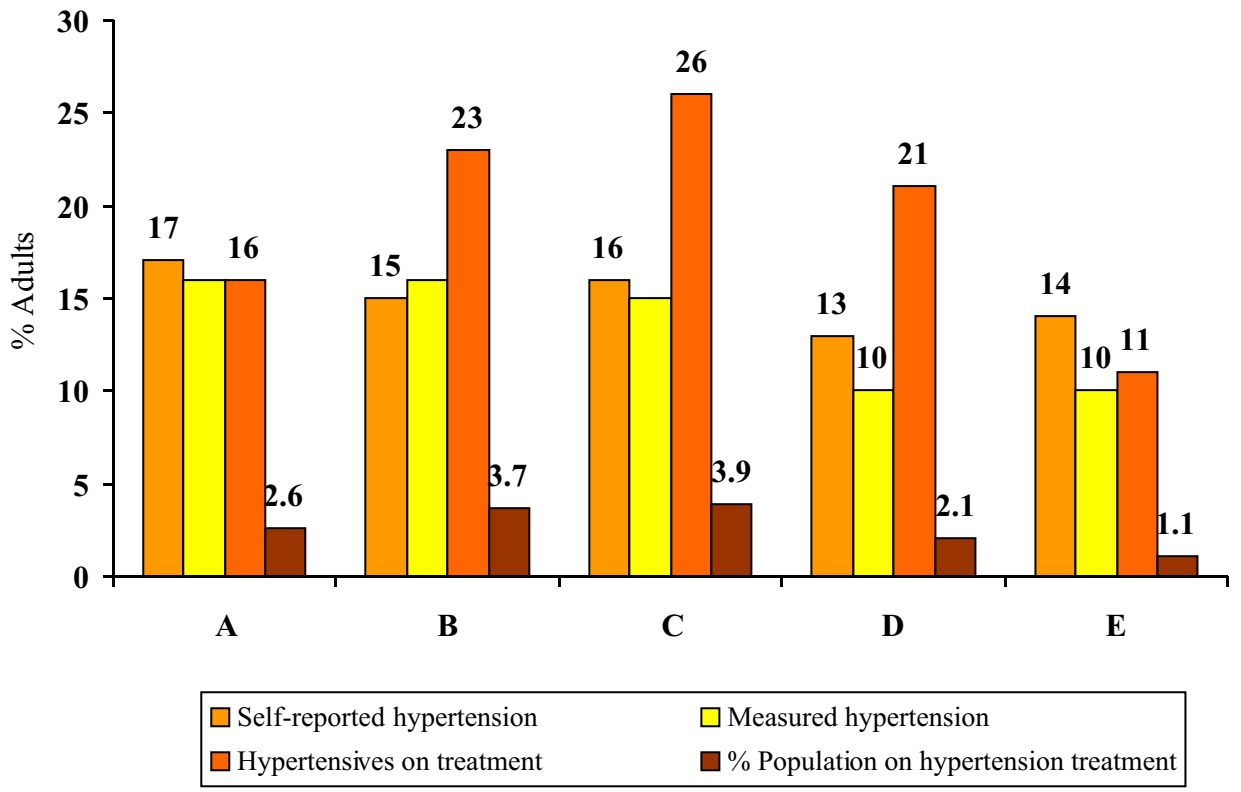
The mental health caseload for the Province is 2.6% of the total head count, ranging from 4.2% in Region A to 1.8% in Region B. This is the equivalent of 217,963 patients across the Province, an increase of 15,436 patients since 1998. Between 1997 and 1999, provision of mental health care in the clinics surveyed increased from 50% to 70%. The 2000 survey shows that 85% of clinics are now providing mental health services daily. The significant increase of both chronic and mental health caseloads in PHC facilities from 1997 to 1999 is a positive indication of an increasingly integrated package of PHC service provision at the clinic level.

Hypertension

Hypertension is prevalent in the Province, with 15% urban adults and just over one out of every ten rural adults (12%) found to have the condition when blood pressure was measured during the 1998 SADHS (figure 39). Out of the 13.5% of adults in the Province found hypertensive, only one out of every five (19.6%) were taking medication to control this chronic condition. In Region E, the situation was worse, with only one out of every ten hypertensive adults (11%) taking medication. Thus, while 10-15% of adults are suffering from elevated blood pressure, only 1-4% of the adult population reported being under treatment.

On the whole, the figures for self-reported hypertension and hypertension as measured by sphygmomameter are very similar.

Figure 39 : Hypertension in Adults - 1998



Source : SADHS

In 2000, the DHIS started collecting data on hypertensive treatment at clinics (table 6). A similar pattern to the SADHS was seen with higher treatment rates in Regions A to C, and far lower rates in Regions D and E.

Table 6 : Hypertension Treatment - 2000

	REGION A	REGION B	REGION C	REGION D	REGION E	E/Cape
% Adults 45+ on Treatment	4.3	8.8	4.0	1.6	0.6	3.9

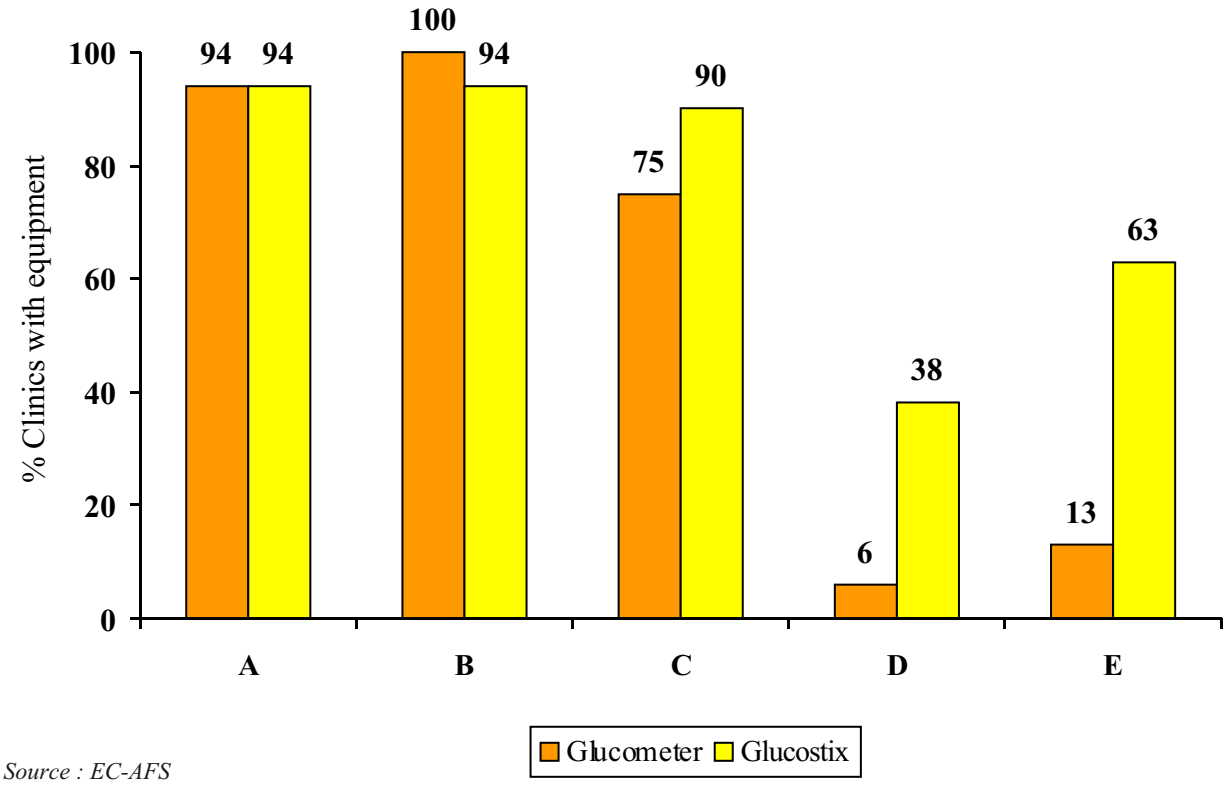
Source : DHIS

Diabetes Health

The huge contrast in availability of equipment in clinics across the Province is paralleled by the ability to treat diabetes. Glucometers are basic equipment necessary for managing diabetic patients, yet only 6% and 13% of clinics in Regions D and E, respectively, have them (figure 40). Glucostix supplies are only marginally better.

Province-wide, 1% of adults are under treatment for diabetes in public clinics, ranging from nearly 2% in Region B to a low of 0.2% in Region E. The lack of diagnostic tools can account, to a large degree, for the discrepancy.

Figure 40 : **Equipment for Managing Diabetes - 1999**



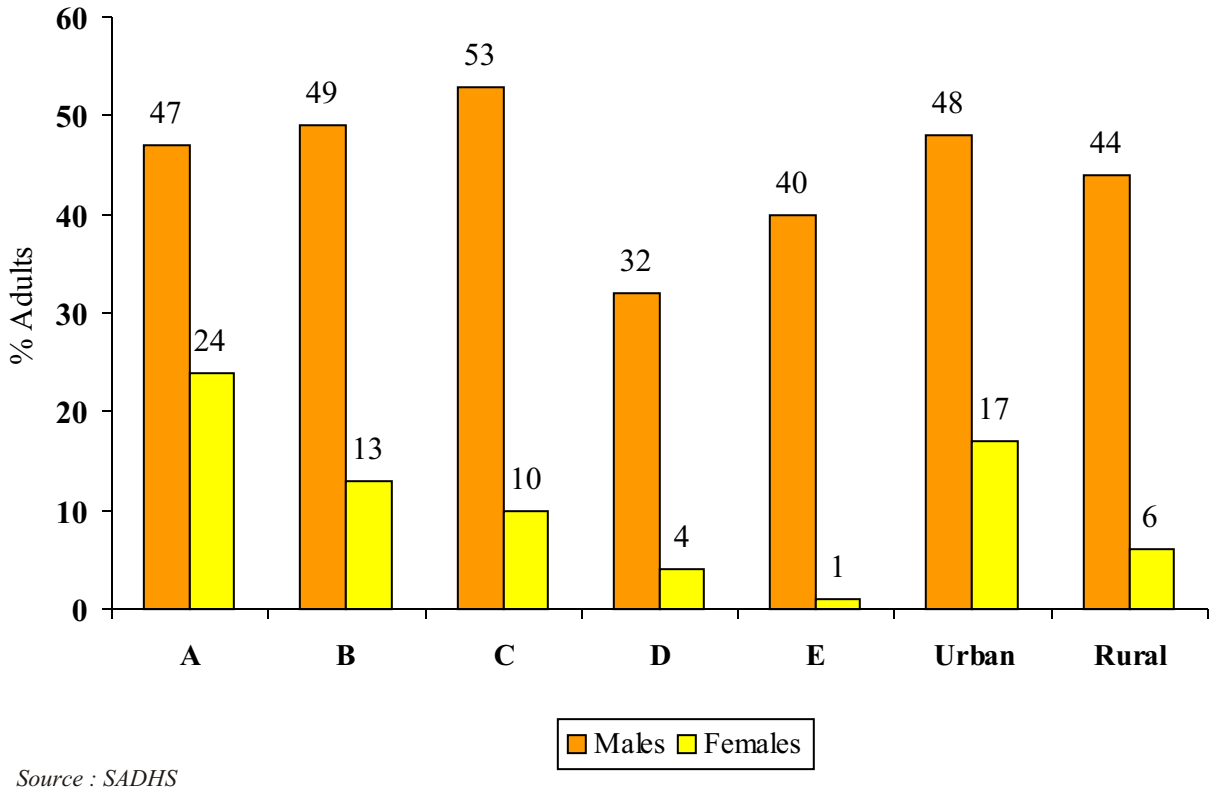
Source : EC-AFS

Asthma and Smoking

Based on SADHS findings, Region E has the highest percentage of adults with asthma (9.8%) and bronchitis (8.8%). All the other regions report that between 6.2% to 7.9% of the population have asthma. The incidence of asthma is higher amongst females (8.0%) than males (6.9%). The SADHS findings also reveal a prevalence of bronchitis ranging from 3.8% to 8.8% of the population.

The SADHS survey of 1998 reveals a huge problem of smoking, especially amongst males (figure 41). In every region of the Province, urban and rural, the vast majority of smokers are male. This raises high risks for men of heart and lung disease. This is particularly marked in Region E, where 40% of adult males smoke as compared with just 1% of adult females. The impact of urbanisation can be clearly seen, with a higher percentage of female smokers in Region A and the other urban regions compared to rural areas (6% province-wide).

Figure 41 : Adults Smoking Daily - 1998



Source : SADHS

Obesity

The SADHS data regarding obesity among adults raises challenging and paradoxical questions, especially in light of the severe malnutrition and stunting identified in children of the Province. One in three women and 12% of men in urban areas were found to be obese. The percentages for rural adults were lower, at 24.8% for women and 7.8% for men. The findings on obesity correlate well with the high rates of hypertension, diabetes and arthritis, all of which are associated with obesity.

Referrals and Back-referrals

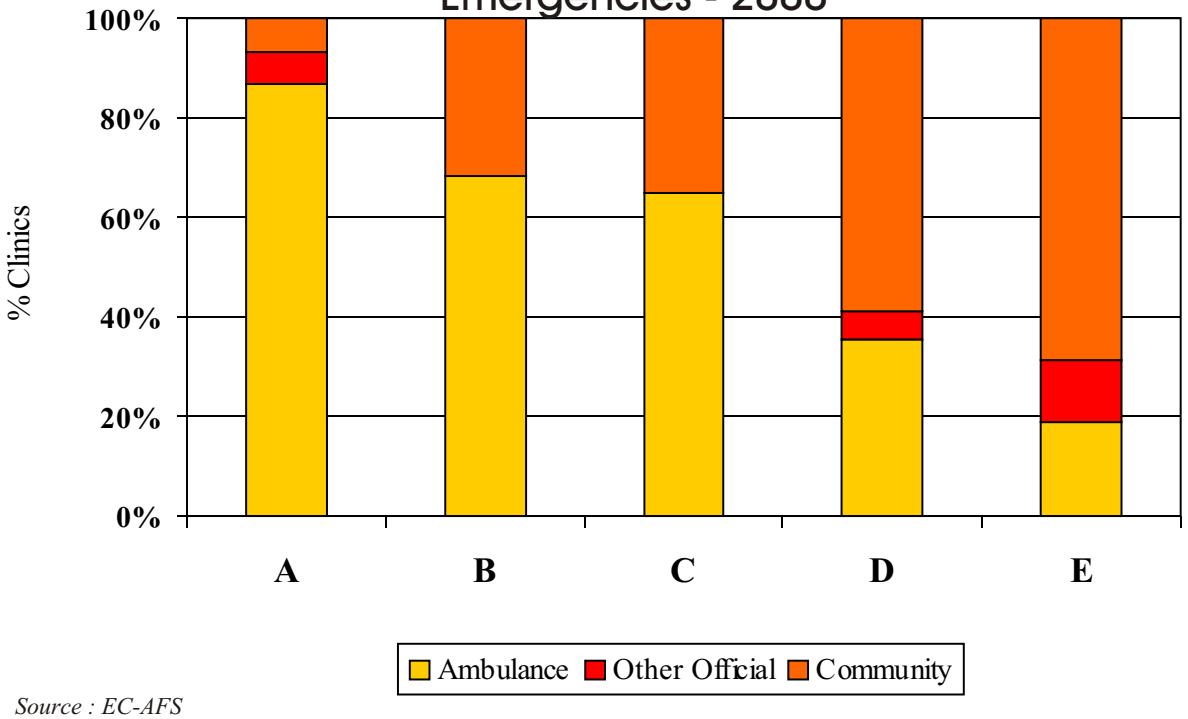
In 1999, the EQUITY Project conducted a study on referrals in the Eastern Cape Province and published a report entitled "Referrals between Levels of PHC in the Eastern Cape". The study concluded that present practices in the Province were generally appropriate and that patients being sent to higher levels represent the more difficult diagnostic or therapeutic management problems, with a heavy preponderance of trauma and obstetrical emergencies.

DHIS findings of 1999 indicate that 4.1% of all PHC cases were referred for higher level care to hospitals or doctors. The highest referral rates occur in Region A(6.7%). The other regions refer between 2.3% and 4.4% of cases.

The baseline survey in 1997 had revealed gross inequities in the access to ambulance services between clinics in the former RSA and those in the former Transkei. Two years later, the follow-up survey of the same sample of clinics showed no improvement. While access to the service was enjoyed by all clinics in Region A, the situation worsened in Region E, with fewer clinics having ambulance access. Ambulances are largely run by local authorities, district councils and transitional local councils. Region E has weak, under-resourced local councils that are unable to provide ambulances for their region.

In the 2000 facility survey, the situation had still not improved as shown in figure 42. Sixty-nine percent of Region E clinics reported no access to official emergency transport, and the only form of transport available to refer patients to higher level of care, would either be a vehicle belonging to a community member or a taxi. The figure for Region D was 59%, in stark contrast to the 6.7% Region A clinics reporting use of such vehicles for emergencies. The average distance from the surveyed clinics to the nearest referral hospital was 30.5 kilometers, with a maximum of 230 km.

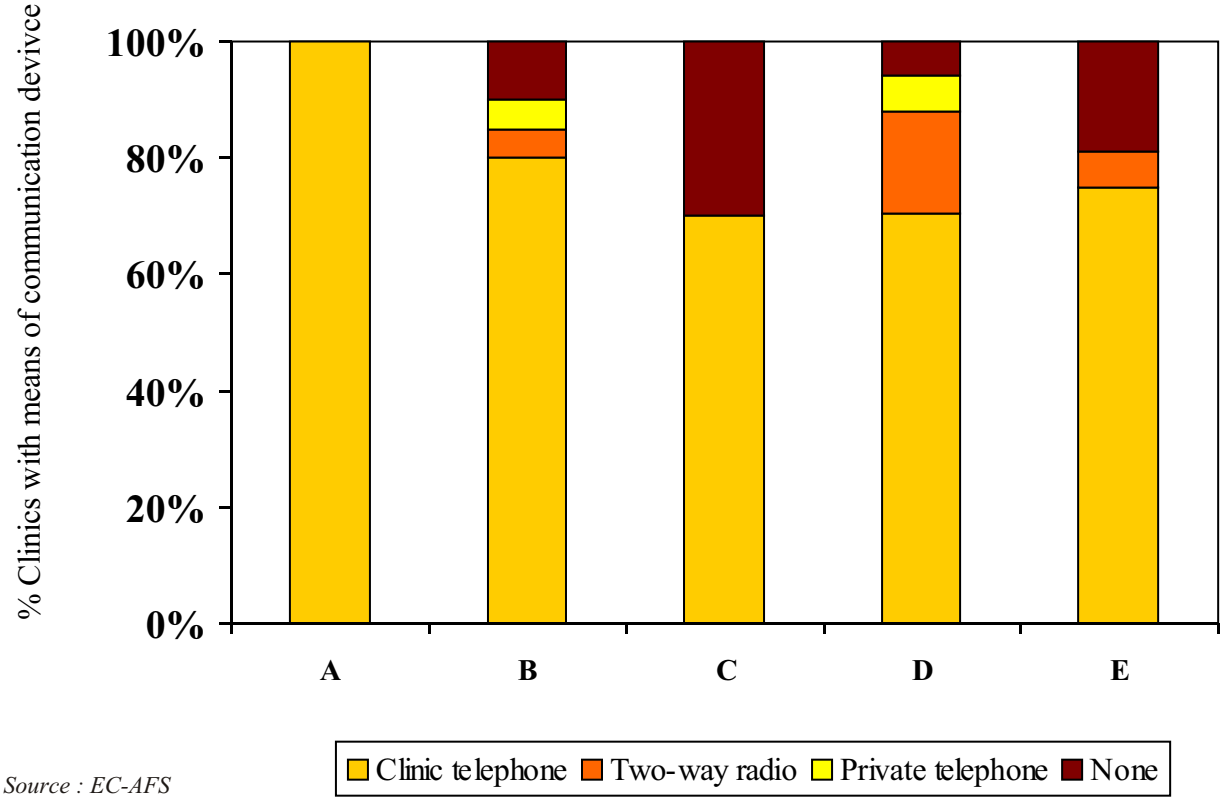
Figure 42 : Type of Transport Available for Emergencies - 2000



Source : EC-AFS

Nurses in the clinics who had previously had an emergency were also asked how long they expected it would take for an ambulance or other emergency vehicle to respond to an emergency. Sixty-four percent said it would take no more than an hour for them to get help. However, when asked how long it had taken to get emergency response during their most recent emergency; 74% said response had been received within an hour, 13% reported response in more than 2 hours and in 2% of cases there was never any response at all. Two out of every five staff (43%) felt that the referral system was not efficient. The 2000 survey also found that 73.4% clinics had a telephone, but only 67% of clinics had telephones in working order (figure 43).

Figure 43 : **Emergency Communication - 2000**



Source : EC-AFS

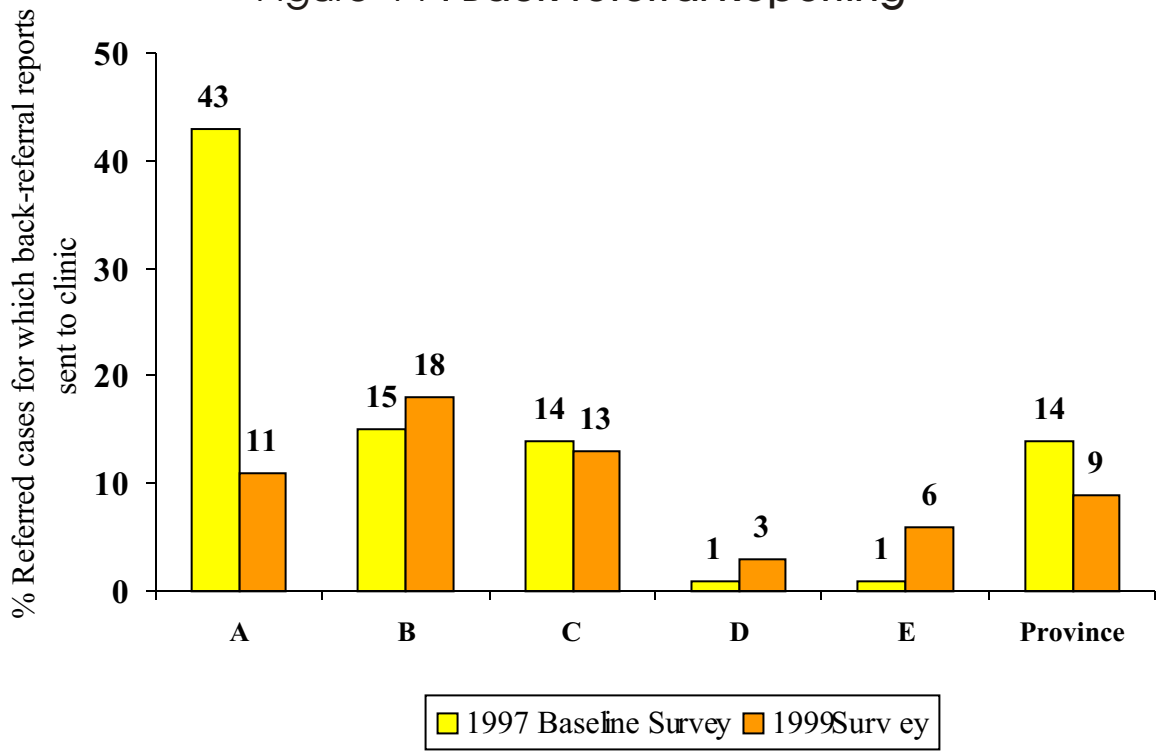
During data collection for the baseline survey, one clinic in the former homeland part of Region B did not have a telephone, and the two-way-radio had not been repaired, after breaking down soon after it was installed a few months before the survey in 1997. Two years later, in 1999, the clinic still had no telephone, and the radio had never been repaired since the last visit by the researchers in 1997.

A review of referral patterns for obstetric emergencies in 2000 showed problems with many districts having to phone the METRO emergency services in a district town to use an ambulance which might be situated locally.

The 1999 review of 1,642 referral case records from the 84 clinics surveyed during the baseline identified that only 8.5% had received back-referral notes (figure 44). This is a decrease from 14% in 1997, reflecting diminishing feedback to referring PHC facilities. According to 2000 facility survey findings, the majority of back-referrals (78.8%) would normally be communicated to the clinic by means of a letter, and in only 18.8% clinics did the nurse report that they were given back-referral information verbally by telephone. No information was collected in 2000 on the percentage of referrals for whom a back-referral report was received.

In 2000, some hospital boards were alerted to this problem for clinics in the hospital's catchment area, and a new checklist for hospital boards was developed to specifically look at this problem. It is hoped that continued pressure will be put on hospital staff to send back full information on patient-held records.

Figure 44 : **Back-referral Reporting**



Source : EC-AFS

Some Recommendations

- **Emphasis on integration of services should continue, in line with the national recommendations on a PHC core package;**
- **As part of the COHSASA quality improvement initiative at hospitals, a system to ensure back-referral notes for referred patients has to be developed;**
- **The management of the ambulance system in the Province as a whole needs to be given priority attention. Where ambulances are not available, innovative systems such as using contracted community vehicles to provide emergency transport have to be considered.**

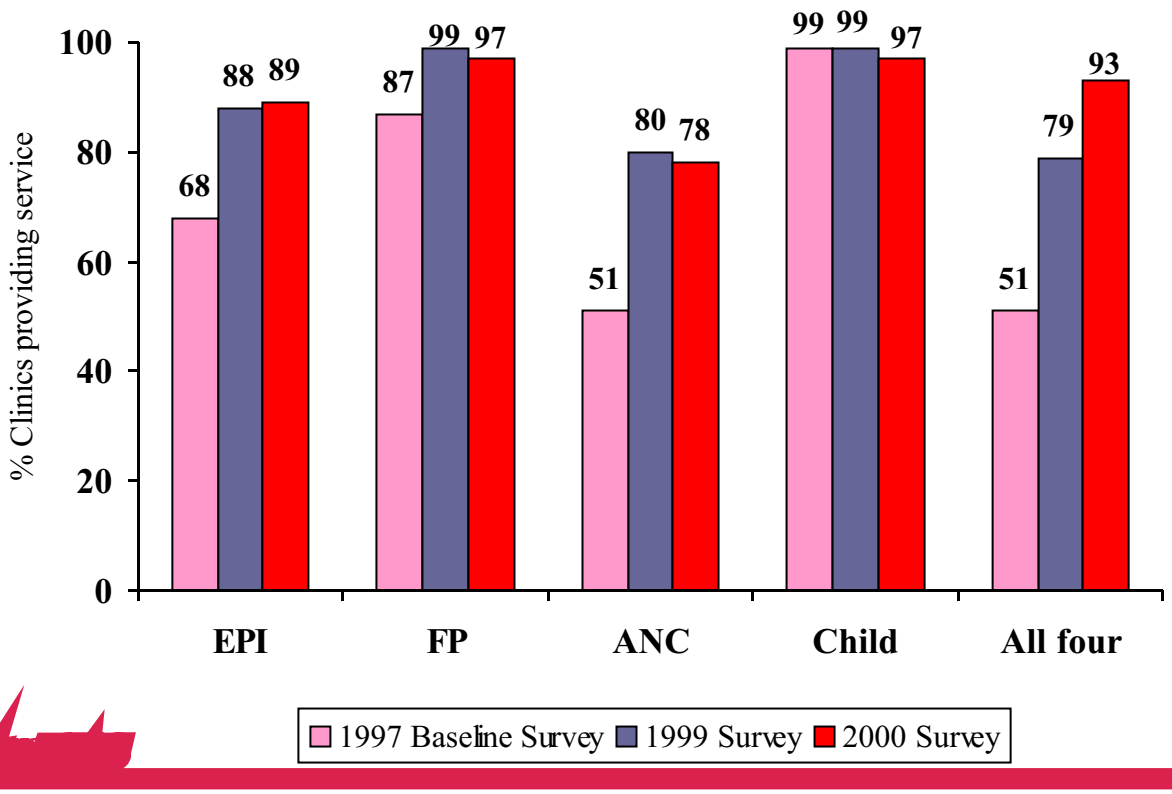
Maternal, Child and Women's Health Services

Key Findings

- The four services of antenatal care, family planning, immunisation and treatment of childhood illnesses are now available 5 days a week in 93% of clinics (up from 51% in 1997);
- Infant and child mortality are unacceptably high in the former Transkei area, and lack of access to safe water for households is a major threat to health;
- Management of diarrhoea in children has improved but proper integrated care for childhood illnesses needs attention;
- Immunisation coverage is improving slowly but still falls far short of expected levels;
- Poor growth and severe malnutrition are problems that persist across the Province.

With a high proportion of the population in the Eastern Cape Province comprising women and children, the provision of maternal and child health services ranks high amongst the priorities of the department's service delivery programs.

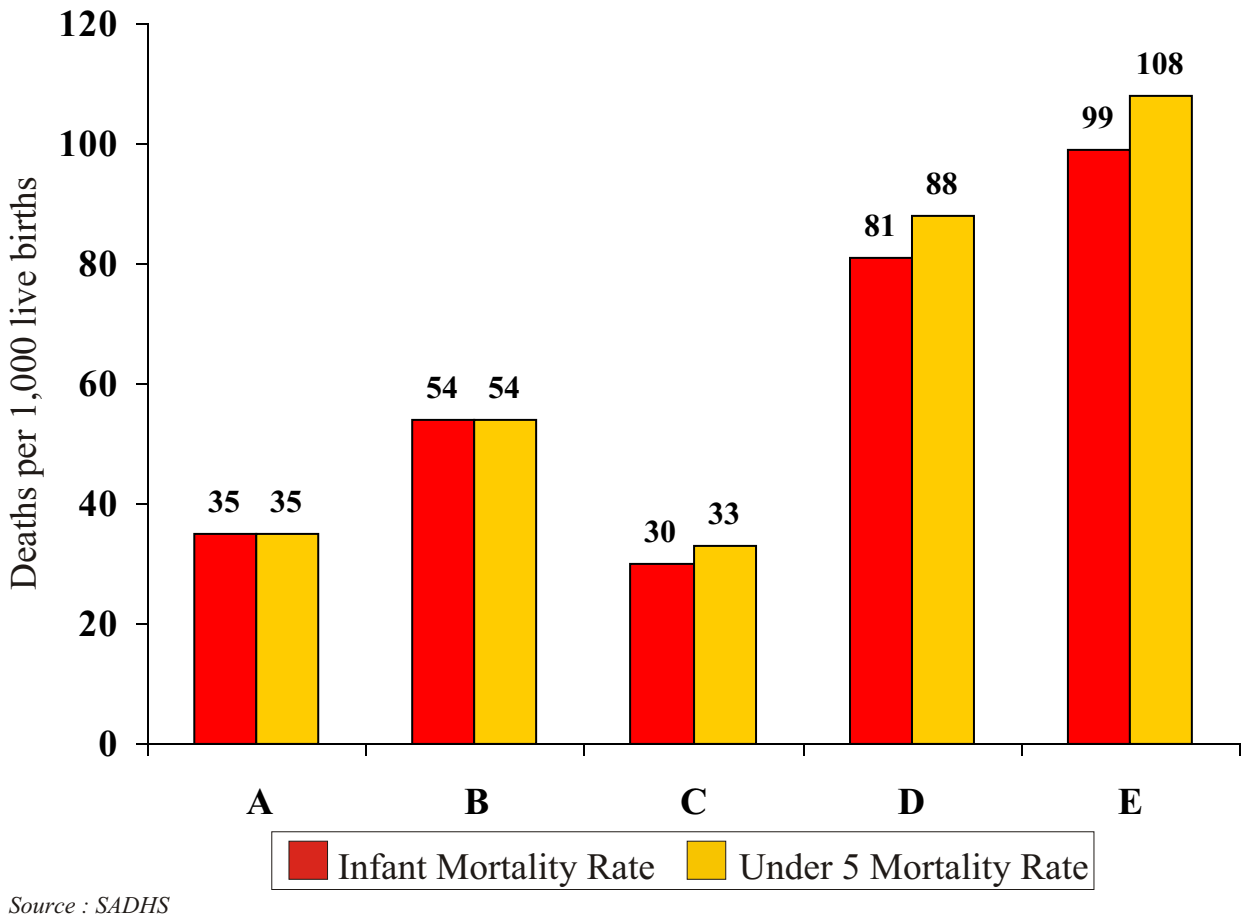
The 2000 facility survey confirms findings of the 1999 survey showing accelerated integration of the four maternal, child and women's health (MCWH) services, from 51% in 1997, to 79% in 1999 and 93% in 2000 (figure 45). This increase has largely been due to ANC being offered at least five days a week in 80% of clinics in 1999, a remarkable increase since the baseline survey when only half of all clinics were providing the service all week days. The survey also shows that provision of all four MCWH services is highest in Region D (94%) and Region E (88%), and lowest in Region C (60%).



Child Mortality

The Eastern Cape Province's infant mortality rate (IMR) of 61.2 deaths per 1,000 live births is the highest in South Africa, according to the 1998 SADHS. In rural areas of the Province, the IMR is higher at 75.3 compared to urban areas (32.8). In Region E it reaches the alarming level of 99 deaths per 1,000 live births (figure 46). The average IMR for South Africa is 45.4. In the former Transkei, children are more likely to die at birth, before reaching age one year or before reaching age five years than in any other part of the country.

Figure 46 : Mortality Rates in the Eastern Cape Province - 1998



Source : SADHS

Integrated Management of the Sick Child - IMCI

Five diseases - diarrhoea, acute respiratory infections (ARI), malnutrition, measles and malaria - are responsible for over 70% of childhood mortality in the developing world. Additionally, these diseases account for 75% of paediatric visits to health care facilities. South African data indicates that diarrhoea and ARI are the leading causes of childhood mortality and hospitalisation, and that malnutrition is still a major health problem.

Diarrhoea

The WHO has developed an intervention strategy - IMCI. The aim is to reduce morbidity and mortality from these diseases. The approach emphasizes promotive and preventive strategies such as breastfeeding and immunisation, and education of the mother. South Africa has adapted the guidelines to address the country's special needs and included a module on HIV/AIDS.

In the Eastern Cape Province, there has been relatively little training on comprehensive IMCI. Whilst a number of clinical staff have been exposed to short courses of usually no more than five days duration, not many have been trained in the full IMCI course, which lasts 11 days. In order to collect baseline data on the implementation of IMCI strategies in the Province, the 1999 survey instruments included observations of the clinic nurse treating a sick child. In each clinic, three such cases were observed by researchers using a checklist to identify whether key investigations pertaining to consultation, general assessment, history-taking and physical examination, and treatment of the sick child based on the IMCI guidelines, were done by the nurse.

ARI

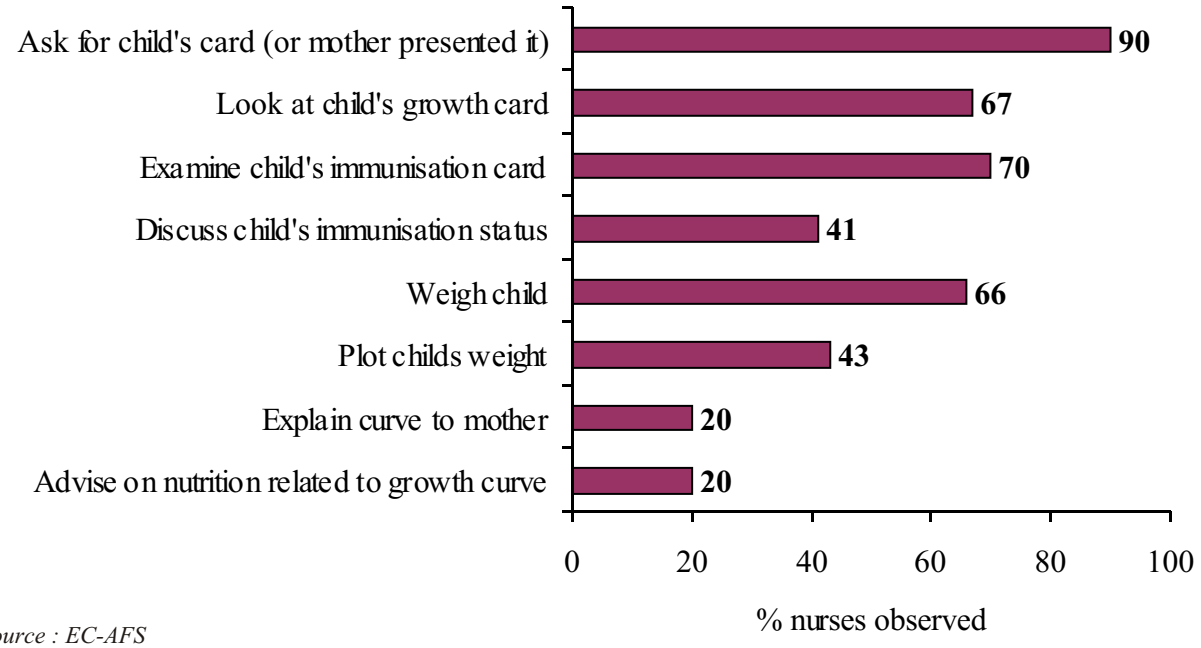
A total of 244 observations of children being treated were done in the 84 clinics surveyed in 1999. Of these 244 children, 49 had diarrhoea. IMCI guidelines dictate that, for every child with diarrhoea, the nurse should ask about the duration of the diarrhoea, frequency of stools and whether the stools have blood. For children less than one year old, the nurse should check for sunken fontanel and pinch the child's skin on the abdomen to examine the degree of dehydration. Results of the observation revealed that, although the nurse asked the mother how long the child had had diarrhoea, in 93.8% of cases, and about the frequency of stools, in 79.2% of cases; the presence of blood in stools was questioned in less than one in four cases (22.9%). Information on the duration of diarrhoea before the child was brought to the clinic, was obtained by the nurse from the mother or guardian of the child. Three in four of the children (73.2%) had had diarrhoea for between one and two days; 7.3% for 14 days, and one child was reported by the mother to have had diarrhoea for more than one month. Of the children with diarrhoea who were less than 12 months old, the nurse did not check for sunken fontanel in two out of every five cases (41.7%), and did not pinch the child's skin on the abdomen in 37.5% of cases.

Measles

Malnutrition

IMCI guidelines further state that every sick child should have its nutritional and immunisation status assessed during the consultation. The results of observations on whether the nurses followed the guidelines on these assessments is shown in figure 47 below. These show that whilst a high percent of the nurses did ask for the child's card (or the mother presented the card), in only one in five cases did the nurse explain the growth curve on the card to the mother, or give the mother advice on nutrition related to the growth curve. In only 9.4% cases did the nurse follow all the eight steps as shown in figure 47, on assessment of nutritional and immunisation status in sick children.

Figure 47 : **Assessment of Child's Nutritional/ Immunisation Status - 1999**



Source : EC-AFS

Out of all children with diarrhoea that were treated by a nurse, in just over 60% of cases the nurse gave the mother instructions on how to prepare ORS using sugar, salt and water, at home. Amongst those given commercially prepared ORS sachets, one in four of the mothers was not told how to prepare the solution using the sachet. In less than 40% of cases, the mother was shown how to administer ORS to the sick child; only 5% of mothers were told to return if the child started passing stools with blood; and in less than 20% of cases the mother was told to return if dehydration danger signs appeared.

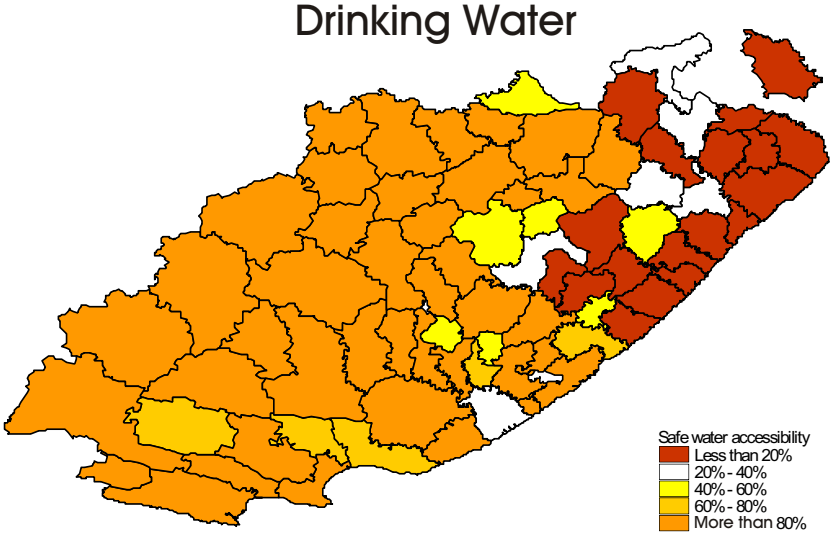
These observations have provided useful baseline information against which progress in the implementation of IMCI guidelines in the Province can be measured. It must be kept in mind that the "poor" performance of staff in following IMCI guidelines is due to the fact that IMCI training in the Province is only just starting, with very few clinic staff having been trained.

Realising that it would be some time for these 11 day courses to reach all staff in all clinics, an interim mechanism has been introduced. Five self-learning booklets on "Priorities in Child Health" have been published and distributed. These deal with comprehensive management of the sick infant and young child.

Diarrhoea in Children

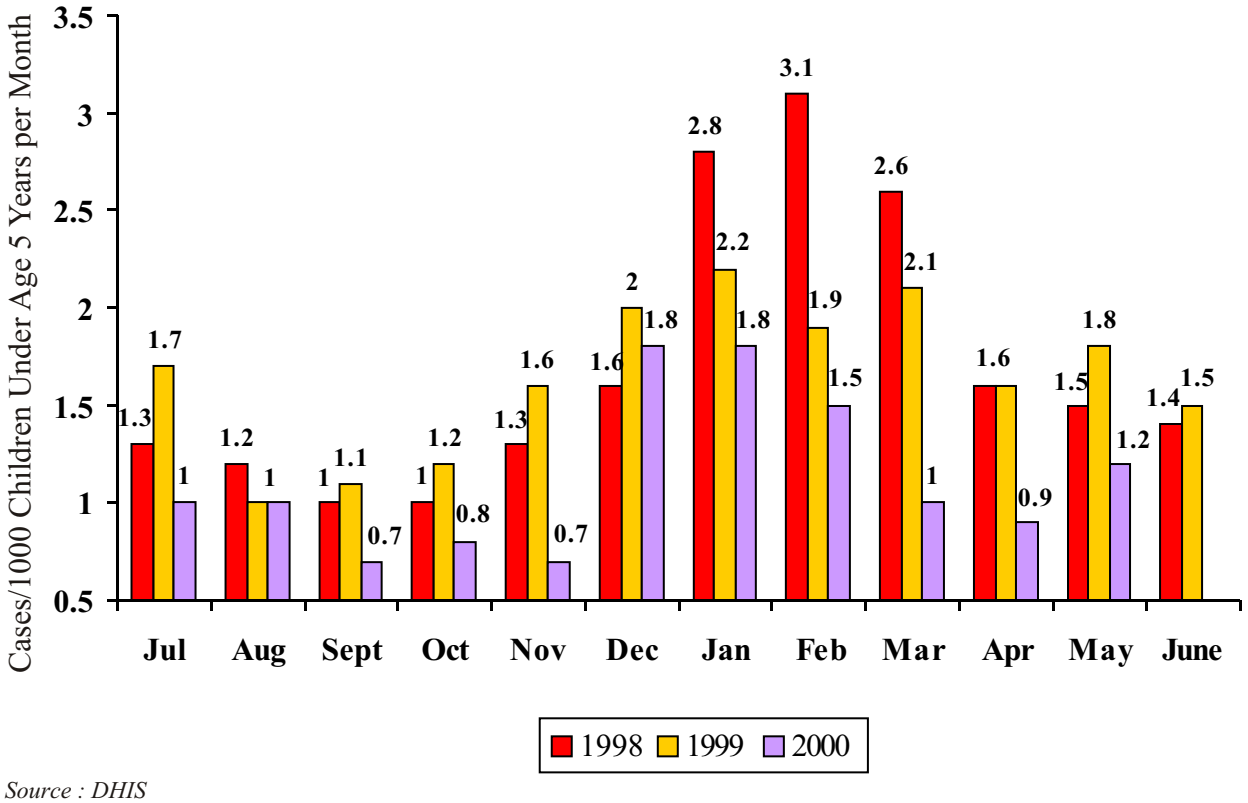
The 1996 Census found alarming levels of access to safe drinking water, with less than 20% of households in most of former Transkei having such access (figure 48). Thus, it is not surprising that diarrhoea is a frequent cause of morbidity and likely the first cause of mortality among children in the Eastern Cape Province. Incidence is highest during the rainy months of December to February, and lowest around August to October (figure 49).

Figure 48 : Access to Safe Drinking Water



Source : StatsSA

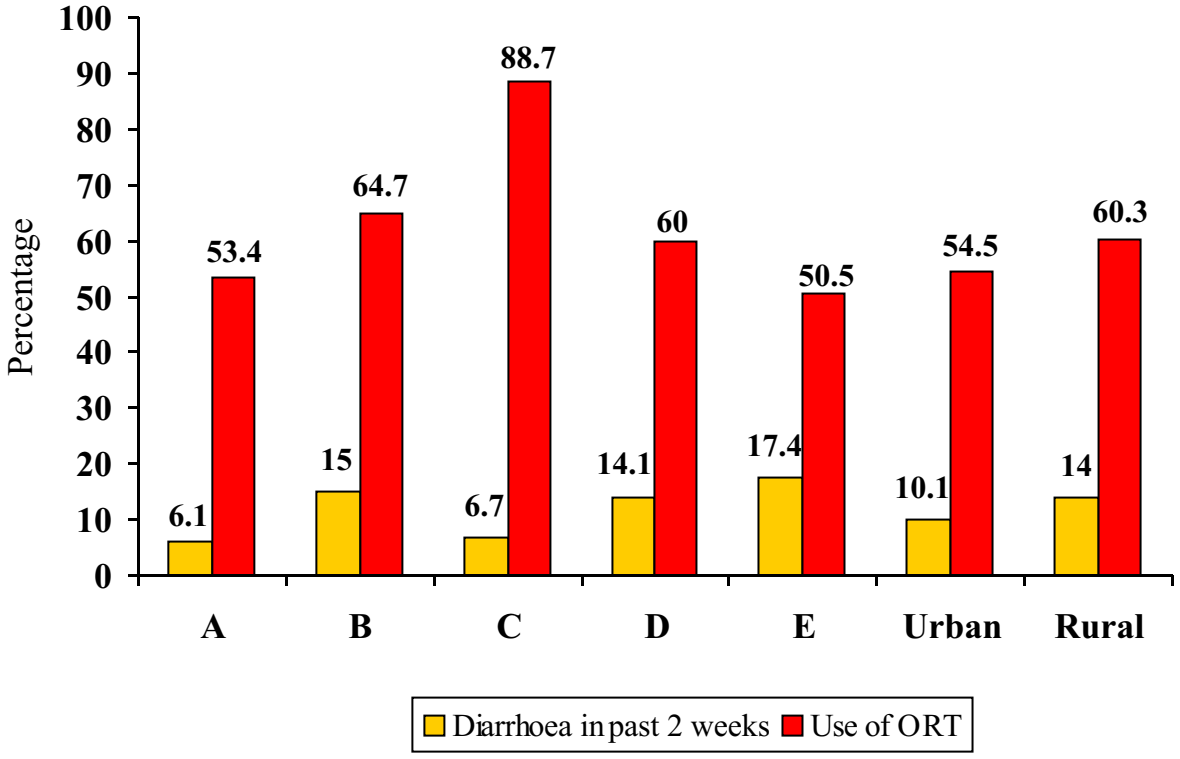
Figure 49 : Monthly Incidence of Diarrhoea Presenting at Clinics



Source : DHIS

Approximately 12.7% of children under age 5 years were reported to have experienced diarrhoea in the two weeks prior to the SADHS in 1998. This implies nearly three episodes per child per year, and the incidence is similar to the national average of 13.2% of children. On the other hand, the DHIS data shows that only about 20% of children seek treatment for diarrhoea each year, implying treatment for only one of every 10-15 episodes. Thus, most are treated at home. As expected, diarrhoea incidence in the last two weeks prior to the SADHS was highest in Regions B, D and E - regions that were all part of the former homelands (figure 50). The use of ORS or home solution was similar to that found in the clinic survey record reviews, at about 3 of 5 cases, with the remarkable exception of Region C where oral rehydration therapy (ORT) use was nearly 90%. Diarrhoea prevalence was higher in rural areas, but adequate treatment was also higher. In general, except for children of women with no education, children of mothers with more education were less likely to have diarrhoea and more likely to receive some form of ORT if they had diarrhoea.

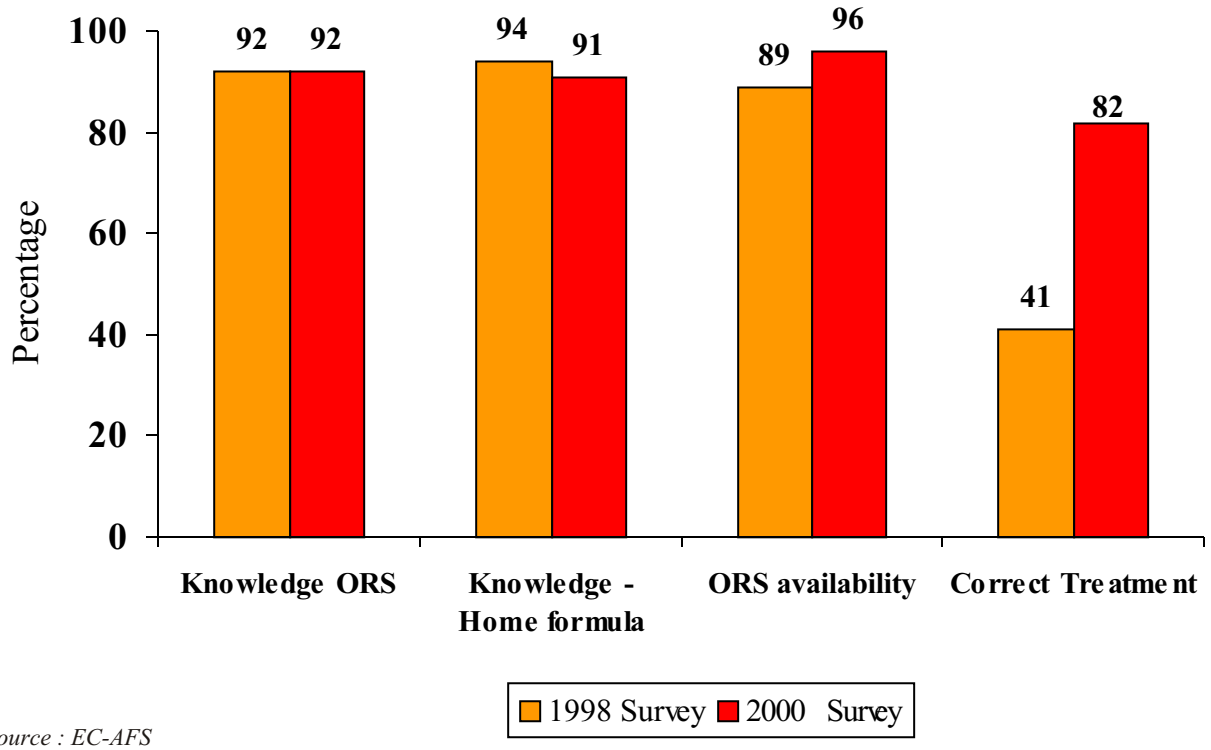
Figure 50 : **Diarrhoea Prevalence and ORT Use - 1998**



Source : SADHS

In 2000, a total of 783 records of children with uncomplicated diarrhoea were reviewed. Eighty-two percent of these records reflected that the children had been treated correctly using ORS only, as recommended in the standard treatment guidelines. ORS sachets were available in 96% of clinics surveyed, and nurses' knowledge of the treatment of paediatric diarrhoea and instructions for preparation of ORS at home, was found to be high (figure 51). These results confirm the findings of the baseline and 1999 follow-up surveys conducted in the same clinics - that considerable improvement has occurred in quality of care as evidenced by the correct treatment of diarrhoea. Knowledge of correct treatment of diarrhoea and the formula for preparation of diarrhoea using home ingredients such as water, salt and sugar amongst nurses, is above 90%.

Figure 51 : Clinic Management of Diarrhoea in Children



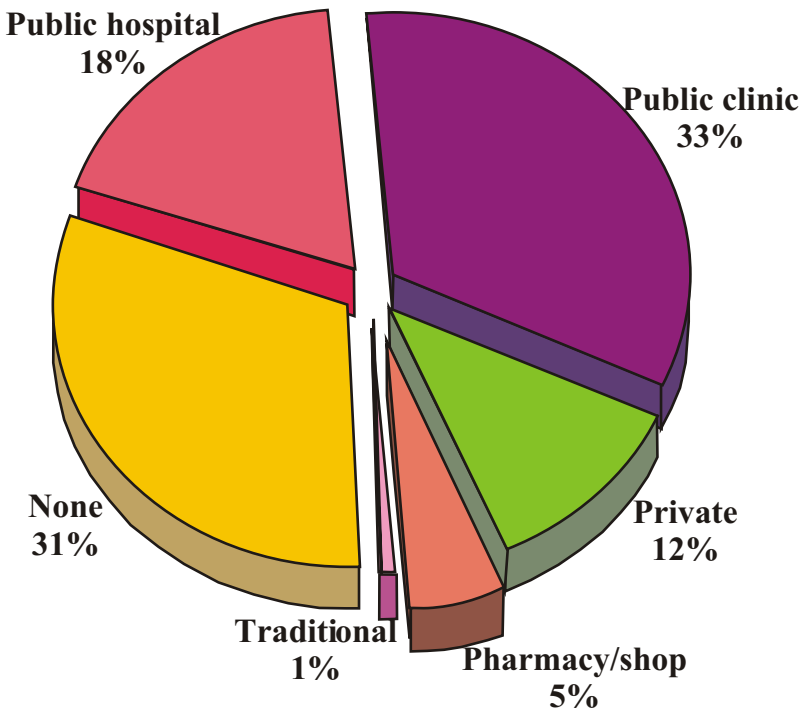
Source : EC-AFS

Although in 1998 ORS availability in clinics was high (89%), and knowledge of its use and of the formula for home preparation of ORS well over 90%, correct diarrhoea treatment was provided to only 41% of the children presenting diarrhoea in 1998. This increased to 82% in 2000. This is an example of the impact of training and supervision that is closing the gap between knowledge and practice, thus improving the quality of care. Two reasons can be cited for the problem of nurses not giving ORS only for uncomplicated diarrhoea. Firstly, despite the knowledge nurses had acquired, many continued to use previous practices of giving other unnecessary medication. However, this is decreasing. Secondly, nurses are often under pressure from parents of children with diarrhoea, who insist on other medications for treatment of diarrhoea. Nurses are now more confident of the correct treatment and can reassure patients.

It should be noted that with only one third of children ever presenting to clinics for treatment of diarrhoea, it appears a far greater number of cases are being treated at home (figure 52). This finding underscores the importance of home treatment.

Of the children who did receive treatment from someone outside the home, the majority received it at a clinic (33%), whereas only 1% received it from a traditional healer. Thirty-one percent received "no treatment", but many of them perhaps now receive home treatment.

Figure 52 : Source of Care for Diarrhoea Treatment in Last 4 Weeks - 1998



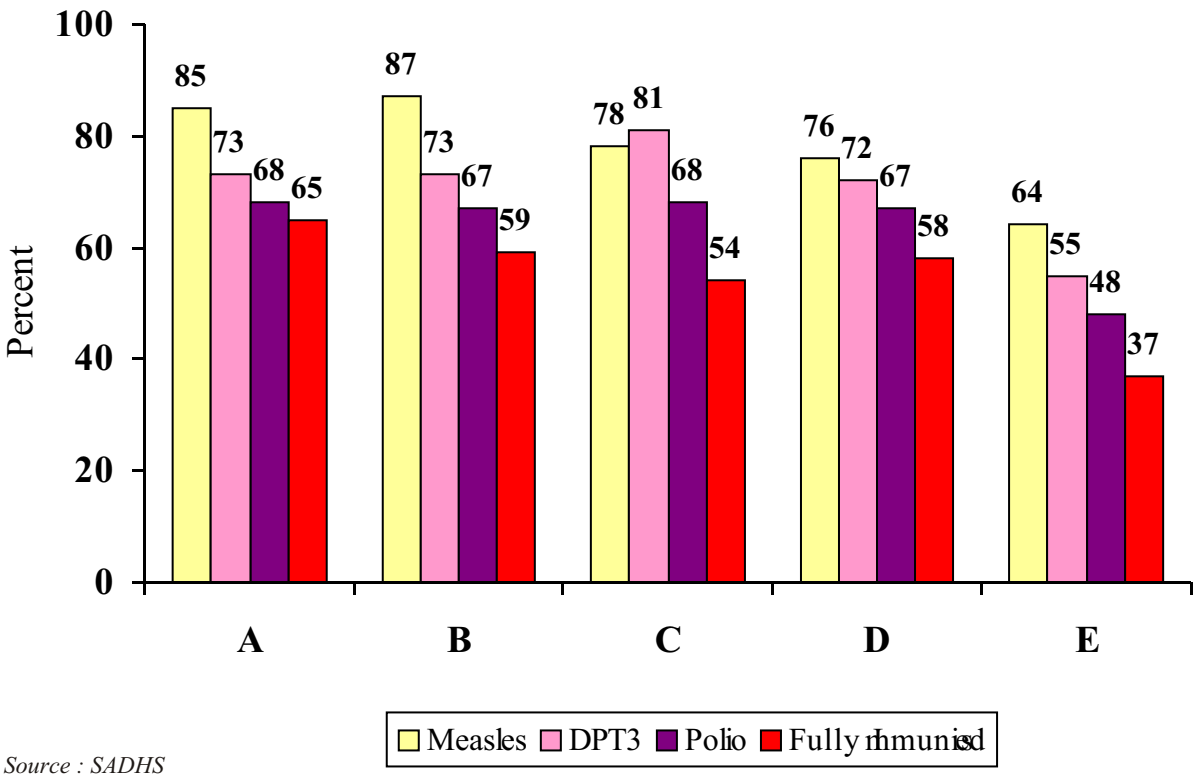
Source : SADHS

Immunisation Against Major Childhood Diseases

The basic childhood immunisations include one Bacillus Calmette-Guerin (BCG) vaccination against tuberculosis; three doses of the diphtheria, pertussis and tetanus (DPT) vaccine; three doses of polio vaccine; three doses of hepatitis B vaccine (HBV) and a measles vaccine. The national schedule now includes Haemophilus influenzae B (HiB) vaccine as well.

Immunisation coverage for children born between 1993 and 1999 was collected in the SADHS either by presentation of a vaccination card or responses provided by mothers (figure 53). Fifty-three percent of children aged 12 to 24 months have been fully vaccinated against the basic childhood illnesses. The proportion of fully vaccinated children is almost twice as high in Region A (64.6%) compared to Region E (36.5%). The proportions are also higher among children of more educated mothers, those living in urban areas, and in the higher income quartiles. Overall, 96% of children have received the BCG vaccination, 68% have received DPT3, 61% have received polio 3, and 75% have received measles vaccination. The SADHS did not collect data on HBV.

Figure 53 : Immunisation Coverage - 1998



Source : SADHS

The DHIS monthly reports of 1999 show that 62% of children under one year of age were immunised against measles. The highest percentage was in Region B with 98%, decreasing to a low of 37.4% in Region E. A total of 1,355 clinic child immunisation records were reviewed in 1997, revealing that 57% of children received their measles vaccination by the age of 12 months. The 1999 survey shows 72.6% of children were immunised against measles, yet only 46.1% of these children were fully immunised, based on a review of 1,508 records. These results compare favourably with the findings of the 1998 SADHS and the DHIS, which found 75% of children immunised against measles and 52.6% fully immunised. Based on record reviews, findings from the 2000 facility survey indicate that 77% of children were immunised against measles, and 69% were fully immunised. The DHIS for the same year reported 71% for measles and 68.4% fully immunised.

What is particularly striking regarding the immunisation data gathered to date is the similarity of coverage estimates that have been provided from the clinic survey immunisation record reviews, the SADHS community data and the DHIS data; which identifies the number of immunisations provided against the estimated population figures. These three independent data collection methods have resulted in a fairly consistent picture of immunisation coverage in the Province.

These results also show that the measles vaccination is not a good proxy for fully immunised children in the Eastern Cape Province. Many children receive measles yet have not completed the required schedule of earlier shots; most likely due to stock-outs of various vaccines throughout the year. Obviously, the Province has still a lot of work to do to achieve an 85% level for fully immunised children. During 2000, the BCG immunisation has been changed from percutaneous to intradermal in line with the WHO suggested policy.

Baby receiving polio drops,

being weighed,

being immunised.

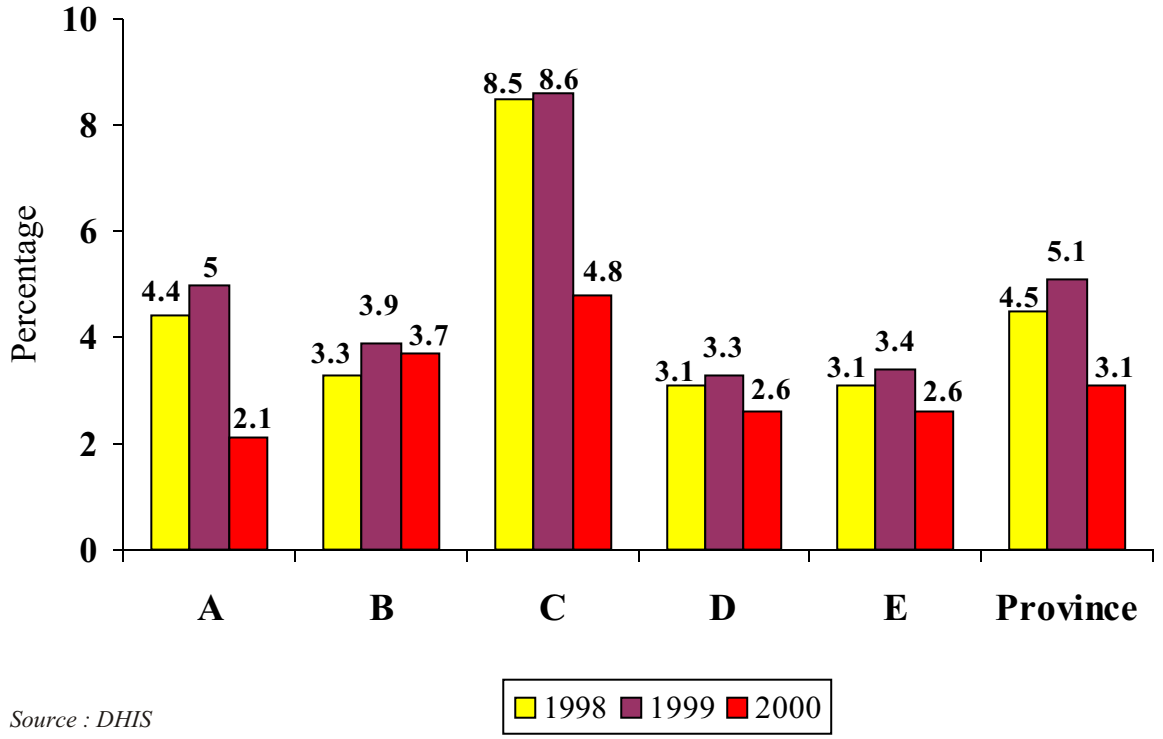
Nutrition

A household survey was conducted by the UWC in Mount Frere health district to assess the nutritional status of 1,646 children aged 0-6 years in villages served by 12 randomly selected clinics. The survey revealed that 11% of children were underweight for age and 3% were wasted, meaning that they were visibly very thin as a result of their body fat and muscle tissue digested and used for energy, due to insufficient food-intake. Children of unemployed mothers had 3 times the level of wasting, but only 9% were underweight for age. Among children of mothers who had less than standard 3 level of education, 17% were underweight for age. When the main caregiver was the father or siblings, 18% and 26% of children respectively were underweight. Households that did not grow mealies (maize) had a higher proportion of children who were underweight compared to those who grew mealies: 10% versus 5%. Among 85% of children who possessed a Road to Health card, 3% were wasted, and 10% were underweight - virtually the same as those without cards, suggesting no obvious benefit from the growth monitoring activities. This study provided important information about the factors associated with young child nutritional status in rural South Africa and suggests directions for planning and targeting community-based nutrition programs.

Virtually all clinics in the Province weigh children routinely. This is an essential component of growth monitoring and nutrition services to identify children in need of additional nutrition.

The DHIS reports that 5.1% of children weighed in any month of 1999 were faltering in growth (figure 54). This is an important finding, as lack of weight gain is a dynamic measure of when nutritional intervention is required. While the figure of 5.1% indicates that the majority of children in the Province are gaining weight as expected, it implies that 1 in 20 children at any given time needs attention in order to avoid becoming malnourished. The figure for children not gaining weight decreased to 3.1% in 2000. While this may represent an improvement, it is more likely a reflection of better data.

Figure 54 : Percent Children Not Gaining Weight



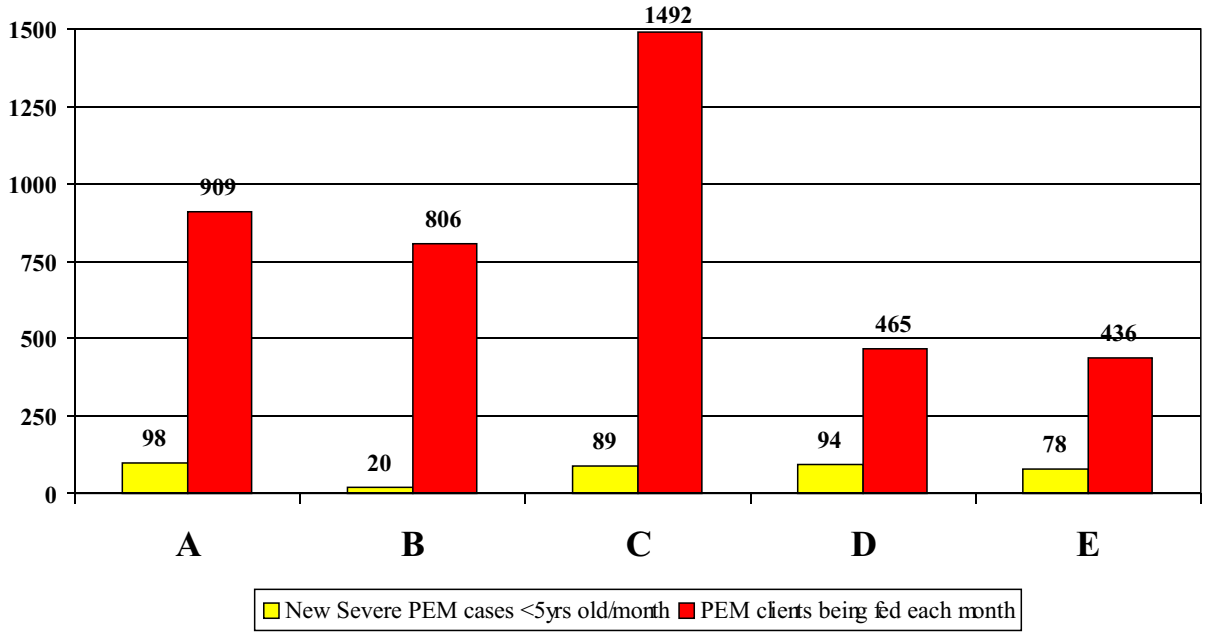
Source : DHIS

Severe malnutrition, defined as marasmus, kwashiorkor or weight below 60% of expected weight for age, continues to be seen throughout the Province. With some 350 new cases per month, spread across the entire Province, it is an important cause for hospitalisation and mortality of young children. The incidence seems to be rising and an increasing proportion respond poorly to feeding and standardised care for Protein Energy Malnutrition (PEM); many dying in hospital in spite of therapy. Many of these are thought to be childhood Acquired Immune Deficiency Syndrome (AIDS), though few are confirmed by laboratory tests.

The clinic-based PEM feeding scheme varies considerably throughout the Province and the number of beneficiaries is over ten times the number of cases of severe PEM diagnosed, as shown in figure 55. There is also a poor correlation between number of cases and numbers being fed under the scheme, suggesting a need for more standardised admission and exit criteria and better monitoring of the use of food in this relatively costly intervention.

In Region C the number of children not gaining weight or severely malnourished is high, and this is presumably the justification for the large number receiving food supplements.

Figure 55 : **Malnutrition July-December 2000**
(New Cases and Total Children Fed Each Month)



Source : DHIS